



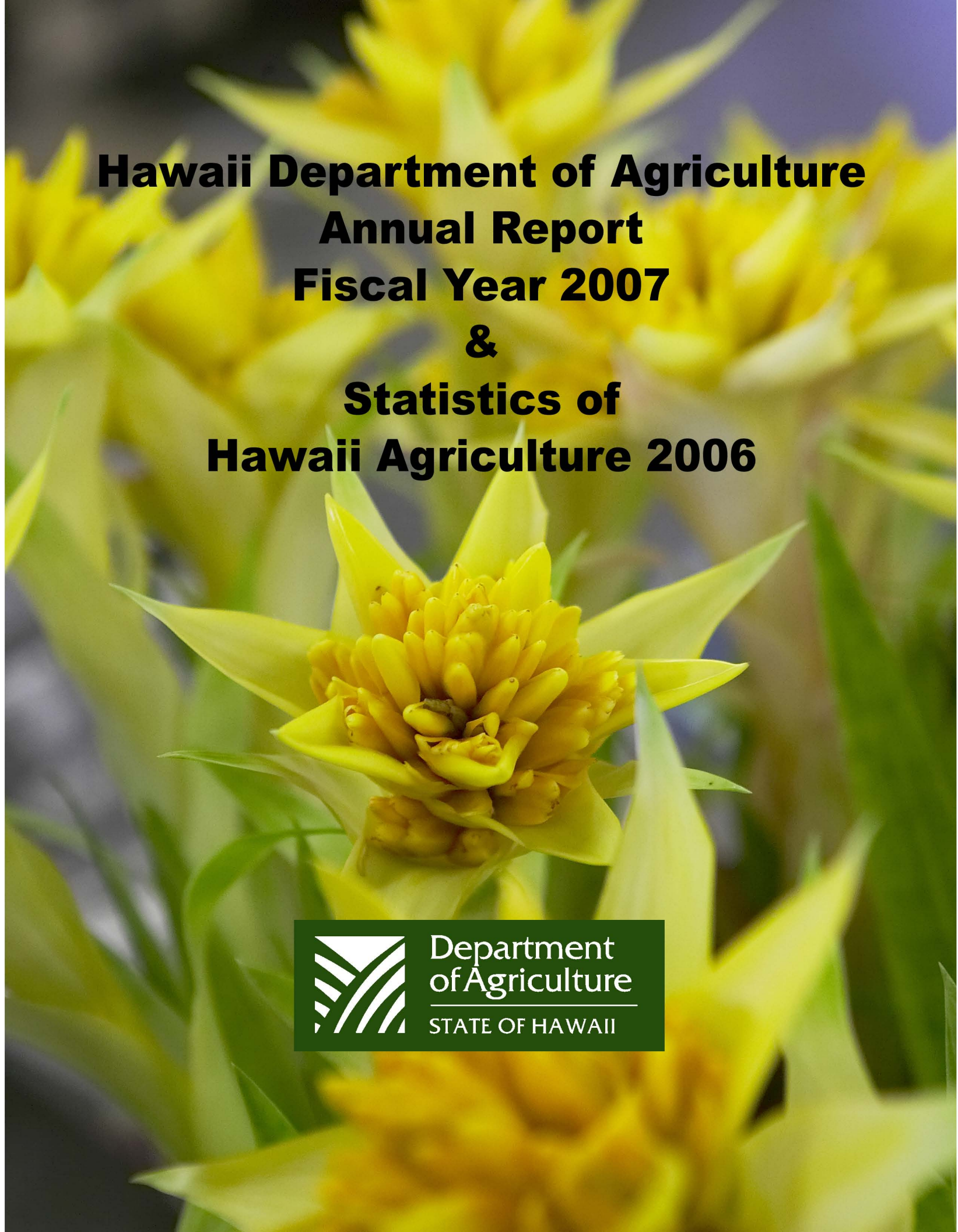
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HAWAII DEPARTMENT OF AGRICULTURE ANNUAL REPORT 2007 & STATISTICS OF HAWAII AGRICULTURE 2006



Hawaii Department of Agriculture Annual Report Fiscal Year 2007 & Statistics of Hawaii Agriculture 2006





Aloha!

It is a pleasure to submit this annual report highlighting the accomplishments and activities of the Hawaii Department of Agriculture.

This year, we have combined the department's Annual Report for Fiscal Year 2007 with the most current statistical report covering 2006 from the Hawaii Field Office of the National Agricultural Statistics Service. We hope that by combining the two reports, we will provide a better resource on the activities of the Hawaii Department of Agriculture, as well as the important historical data for agriculture in Hawaii.

During the period covered in this report, the administration and staff of HDOA have continued their dedicated work toward supporting, expanding and promoting agriculture in Hawaii.

A few of the significant events of the 2007 Fiscal Year include:

- ◆ The earthquakes of October 2006 caused catastrophic damage to important irrigation systems on Hawaii Island and department staff pulled resources from the county and other state departments to try to restore water to as many farmers as possible. The damage was so severe that the repairs will be ongoing for years.
- ◆ Twenty-six agricultural loans were approved, totalling more than \$1.2 million and helped to retain or increase farming and aquaculture acreage by 3,828 acres. The majority of the loans went to farmers who suffered damage due to flooding and earthquakes in 2006.
- ◆ Varroa mites, a deadly parasite of honey bees, were discovered on Oahu and the department implemented a plan to prevent the spread of the mite to neighboring islands.
- ◆ Act 221, the Livestock Feed Reimbursement Program, was enacted to revitalize Hawaii's livestock industry and increase Hawaii's food security. The program has begun to reimburse qualified farmers for a portion of their feed costs, which continue to rise.
- ◆ The Plant Quarantine Branch filled 34 new staff positions approved by the legislature in 2006, increasing the inspection corps at major ports of entry. Work continues on the state's biosecurity plan to increase Hawaii's food security and protect Hawaii's unique environment.

As we continue our mission to strengthening agriculture and aquaculture in the State of Hawaii, we truly appreciate your interest and support.

Sincerely,

A handwritten signature in cursive script that reads "Sandra Lee Kunimoto".

Sandra Lee Kunimoto, Chairperson
Hawaii Board of Agriculture



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This annual report is accessible via the department's website at: www.hawaiiag.org/hdoa/ or copies may be requested by calling (808) 973-9560 or (808) 973-9588.

Cover photo: "Puna Gold" bromeliads



Planning & Development

The Hawaii Department of Agriculture (HDOA) actively seeks to protect existing farming areas and promote increased access to, and productive use of, thousands of acres of prime agricultural lands and infrastructure vacated by plantations throughout the state. The department, as principal advocate for agriculture among state agencies, offers consultative input into county, state, and federal land use planning and permitting, environmental program development and implementation, and initiates broader planning and economic development efforts to ensure the availability of agricultural resources and the growth of agricultural businesses. While modest in comparison to the visitor industry, the economic activity generated by diversified agriculture is stable and steadily increasing. Furthermore, characteristics associated with agricultural activity (open working landscapes, locally-grown fresh produce, reduction in atmospheric carbon dioxide, groundwater recharge) provide real value to Hawaii residents and visitors.

With the passage of the landmark Important Agricultural Lands Act (Act 183, 2005 Session Laws of Hawaii), the department, with the assistance of the Department of Taxation, established a 28-member forum to develop agricultural incentives. The forum produced and promoted a comprehensive set of Important Agricultural Land (IAL) incentive bills before the 2007 Legislature. These bills promote agricultural viability, sustained growth of the agricultural industry, and the long-term use and protection of IAL for agricultural use in Hawaii. Unfortunately, none of the proposed IAL incentives bills passed. The department plans to ask the 2008 Legislature to reconsider these crucial bills.

The department strongly supported a measure heard before the 2007 Legislature that sought to mitigate problems arising from the proliferation of “fake farms” – subdivisions of agricultural land where there is little or no

agricultural activity. A major impact of these subdivisions is that they increase the value of agricultural lands for residential use rather than agricultural production. The price of land is often far beyond what a farm income is able to afford. Farmers seeking to lease lands often find lease terms and rents that are very short and expensive.

The measure requires every lot in agricultural subdivisions approved after July 1, 2007 to be used solely for agricultural activities, agribusiness, or subsistence farming; it requires the counties to require lot owners of subdivided agricultural lands applying for a building permit to substantially establish agricultural activity and submit farm plans, prior to approving building permits; and requires lot owners to include recorded deed restrictions that run with the land requiring agricultural use of the subdivided lots. These features are significantly more rigorous and descriptive than what currently exists in Chapters 205 and 46, Hawaii Revised Statutes. The measure did not pass in 2007; however, the department intends to ask the 2008 State Legislature to reconsider this critical measure.

The department also supported the protection of agricultural lands and related infrastructure as well as the expansion of diversified agriculture development in general. The department submitted testimony and position statements before county councils and county departments, state departments, the State Land Use Commission, and other organizations on agriculture-related issues including amendments to agricultural property tax programs, county-level initiatives to protect prime agricultural lands, facilitating discussions between farmers and landowners on “good neighbor” and land tenure issues, amendments to County agricultural zoning and community plan ordinances, and amendments to state and federal environmental regulations affecting the use of agricultural land and water resources.



Office of the Chairperson Projects and Initiatives

Important Agricultural Lands

Act 183 (SLH 2005) mandates that HDOA develop incentives to promote viability, sustained growth, long-term use and protection of Important Agricultural Lands (IAL) in Hawaii. Along with other key agencies, organizations and stakeholders, HDOA prepared and submitted its findings and recommendations for incentives for IAL to the Twenty-Fourth State Legislature. The report identified six high-priority incentives along with others for future consideration. While the high-priority incentives received support and interest, none were passed during the legislative session. HDOA will continue to work with its partners in the coming legislative session to protect and preserve important agricultural lands for the future of Hawaii's agriculture.

HDOA also offered legislation to stop the further creation of fake agricultural subdivisions. That measure was not adopted in the last session; however, the department will continue to pursue this important initiative.

Buy Fresh, Buy Local

The Buy Fresh, Buy Local campaign has become a regular feature of the KITV Morning Show with monthly segments spotlighting Hawaii farmers and their island-fresh produce. The segments are aimed at making a connection between consumers and the local farmers, which will hopefully encourage them to make conscious decisions to purchase locally grown products over those that are imported into the state.

The Buy Fresh, Buy Local campaign began in 2005 as a joint project of the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR), the Hawaii Farm Bureau Federation and the Hawaii Department of Agriculture. A Seasonality Chart was developed that depicts when local crops are in season so that chefs and consumers can plan their menus around the freshest produce. The chart continues to be available on CTAHR and HDOA websites. The Hawaii Medical Service Association (HMSA) also printed the chart as a public service and included it in its member magazine.

Photographs and recipes from the KITV segments are also available on the department's website at: http://www.hawaii.gov/hdoa/add/add_md/bfbl

Workshops and Conferences

HDOA, along with nonprofit, university and state agency partners, hosted the 2006 Agriculture Conference and the BioEnergy Workshop. The Ag Conference, a biannual meeting dedicated to agriculture in Hawaii, brought together producers, industry groups, landowners, community groups, nonprofit organizations, as well as

state and federal agencies to discuss topics related to the conference theme, "Maximizing your bottom line." Speakers presented valuable information covering agricultural tourism and other marketing opportunities, IAL and agricultural worker housing. The inaugural BioEnergy Workshop brought together producers, landowners and renewable energy advocates to share data, methodologies and ideas regarding the potential for renewable energy production in Hawaii. Goals of the workshop included promoting a collaborative environment for progress, as well as informing the audience about recent legislation and state and federal funding opportunities.

Emergency Management

HDOA continues its efforts towards emergency management and preparedness. Utilizing United States Department of Homeland Security funds, HDOA is in the final stages of updating emergency response plans in accordance with the National Response Plan and the National Incident Management System.

HDOA also continues to participate in various emergency response training opportunities, including table top exercises focused on avian influenza and plant pests, and accredited courses covering the Incident Command System (ICS), Multi Agency Coordination Systems (MACS) and Continuity of Operations Planning (COOP) hosted by the Hawaii Department of Health, the Hawaii State Civil Defense, and USDA's Animal and Plant Health Inspection Service. In August, HDOA was represented at a full-scale exercise in Montana in preparation for a plant-focused full-scale exercise scheduled for 2008 in Hawaii. HDOA also participated in a real time web-based exercise testing plant pest diagnostic capabilities in Hawaii and the Pacific, hosted by the Western Plant Diagnostics Network.

Project Coordination

The Chairperson's Office works with divisions throughout HDOA, industry organizations, nonprofit organizations and community groups to collaboratively screen, apply for and manage grants and projects relating to increasing the viability of agriculture in Hawaii. Examples of such grant projects include risk management education training for refugee, immigrant and other low-income farmers on Oahu and research on local and organic seed availability.

Federal Farm Bill

Through the National Association of the State Departments of Agriculture (NASDA), HDOA gives input on issues specific to Hawaii, language and legislation regarding the federal Agricultural Appropriations Bill, also known as the Farm Bill. Issues of importance to Hawaii range from funding for specialty crops and continued conservation programs to new bioenergy initiatives and increased border protection to prevent the entry of invasive species.



ADMINISTRATIVE SERVICES OFFICE



Elaine Abe
Administrator

The goals of the Administrative Services Office are:

- 1) to meet the staff support needs of the department's programs and personnel by providing guidance, training, information, efficient equipment and vehicles, and adequate facilities, and facilitating the processing of their requests in order to enhance managers' decision making capabilities and employee productivity; and**
- 2) to meet the needs of the public by assisting them in their requests or directing them to the appropriate entity to address their needs.**

The following is a list of projects that have been completed:

- ◆ Implemented the State Procurement Office's (SPO) delegation of authority to the departments to approve purchases off the office supplies vendor list.
- ◆ Established an emergency pCard program approved by SPO that will be activated upon the Governor's declaration of a disaster. Developed departmental emergency pCard procedures that provide guidelines and responsibilities at various levels of the program. As of June 30, 2007, issued 14 emergency pCards.
- ◆ Coordinated with SPO the implementation of the Hawaii Electronic Procurement System (HePS) by 7/1/07 start date. Designated and coordinated with SPO training for HePS Administrator and forty-one (41) departmental buyers. In FY 2007, seven solicitations were successfully conducted on HePS.
- ◆ Implemented new travel rules established by SPO.
- ◆ Implemented guidelines and procedures for safekeeping and proper destruction of personal information by securing confidential records.
- ◆ Updated sections of the department's accounting manual with current procedures, including contract management to address a finding in the Legislative Auditor's financial audit of the department, and developed guidelines for new areas such as emergency pCard programs, HePS, and grants.gov.
- ◆ Modified Motor Pool System to collect information required by Act 96, SLH 2006, Relating to Energy. Developed database to import and summarize Hawaiian Petroleum transactions.
- ◆ Enhanced Dealer Licensing System as request by user.
- ◆ Updated network software on King Street and Plant Industry servers.
- ◆ Transferred 95 percent of hawaiiag.org/hdoa webpages to Information Communication Services Division.
- ◆ Upgraded Lotus Notes to Revision 6.5.5.
- ◆ Replaced network equipment no longer under maintenance support.
- ◆ Connected Aquaculture Sand Island Office to the NGN network.
- ◆ Developed Energy and Water Conservation and Resource Efficiency Program, established target consumption goals for electricity, fuel and environmentally preferable products, and compiled energy data to meet requirements of Section 168.5 of Act 160, SLH 2006, and Act 96, SLH 2006, Relating to Energy.
- ◆ Initiated project to complete the necessary National Pollutant Discharge Elimination System (NPDES) permit requirements for discharges of storm water from small MS4s.
- ◆ Established six-year special repair and maintenance and capital improvement program for department's office buildings.
- ◆ Installed security gates at the King Street facility.
- ◆ Coordinated training session for Oahu and neighbor island secretaries.
- ◆ Implemented change in residency requirements for recruitment.
- ◆ Participated in one job fair at the Blaisdell Convention Hall.
- ◆ Worked with Plant Quarantine Program to fill a number of vacant positions on all islands.
- ◆ Implemented a service contract checklist to determine if services are exempt from civil service.



- ◆ Coordinated with Hawaii State Federal Credit Union brown bag meetings for employees.
- ◆ Participated with other departments and the Personnel Transaction Office (DHRD) in a discussion group to find problem areas and streamline the HRMS process to record personnel.
- ◆ Developed Department of Agriculture Limited English Proficiency Plan.

Major projects still in progress are:

- ◆ Working with consultants to transfer Plant Quarantine on-line system to be housed at ISCD.
- ◆ Continuing to network all Oahu and neighbor island offices to State's NGN.
- ◆ Transferring applications to new APPX application server.
- ◆ Developing telecommunication database to inventory all phone and data lines.
- ◆ Coordinating various repair and maintenance projects to initiate repainting, repairing and energy efficiency projects. Also coordinating various capital improvement projects to correct safety concerns and other deficiencies, and make improvements at department facilities including re-roofing and air conditioning improvements at the Lanikaula office, air conditioning and electrical improvements at the King Street facility, and retro-commissioning projects at various facilities.
- ◆ Auditing leave records of program record keepers.
- ◆ Reviewing and rewriting internal personnel policies and procedures.
- ◆ Monitoring the length of time to service various program requests.
- ◆ Implementing the HDOA Workplace Violence Action Plan.
- ◆ Assisting the Plant Quarantine Program in establishing and filling new biosecurity Plant Quarantine Inspector positions and Plant Pest Control Aides/Technicians.
- ◆ Implementing procedures for processing contracts for services.
- ◆ Continuing to update the department's accounting manual with existing procedures and new guidelines and procedures for various procurement and purchasing processes.
- ◆ Attending State Procurement Office training sessions on various procurement methods and changes to the procurement law to provide improved guidance and support to programs.
- ◆ Updating and improving the contract checklist for certification and encumbrance by creating checklists by type of contract, and combining the contract requirements of the department and DAGS on one form.
- ◆ Updating Oahu and neighbor island staff directory for dissemination.
- ◆ Issuing new department identification badges to all employees.
- ◆ Providing training on vehicle maintenance and operation to new employees.
- ◆ Providing training for managers on the Department of Agriculture Limited English Proficiency Plan, and conducting survey to determine what kind of interpreter services and in what languages these services are needed.
- ◆ Coordinating FY07 Environmentally Preferable Products Purchased Survey for the department.

Other future projects include implementing the use of Grants.gov as a means of searching and applying for federal grants electronically, replacing server at Auiki St. and administration server at King Street, modifying Animal Quarantine System application, installing GIS server, conducting Labor Relations Workshops for supervisors, and developing flow charts and procedures for major personnel functions.



AGRICULTURAL DEVELOPMENT DIVISION



Matthew K. Loke, Ph.D.,
Administrator

The Agricultural Development Division (ADD) serves to promote the economic viability of commercial agriculture in Hawaii by sponsoring joint marketing programs for agricultural products with high revenue growth potentials; facilitating the development and expansion of marketing opportunities for targeted agricultural and processed products; and providing timely, accurate and useful statistics.

While this has been a challenging year for Hawaii's agriculture, which faced the departure of Del Monte Fresh Produce, drought and earthquakes, the division continued its efforts on marketing diversified agricultural products.

The launch of the Seals of Quality (SOQ) branding program provided much of the impetus. The SOQ program participated in many conferences and trade events including the HTA Annual Conference, the American Dietetics Association Conference, the Hawaii Agricultural Conference, and the Pacific Rim Incentive Meeting Exchange (PRIME).



Two additional achievements by the ADD include:

- ◆ In collaboration with the Hawaii Visitors and Convention Bureau (HVCB) and McNeil Wilson, the division assisted in the production of Bravo's "Top Chef" final two episodes in Hawaii. We were privileged in assisting the production team and celebrity chefs to secure the pantry list and other ingredients, as well as, organizing the farmers' market. As a result of the show, HDOA was mentioned in Forbes magazine and the New York Times.
- ◆ In partnership with the Western Center for Risk Management Education (RME), we completed a submission of the AGR-Lite – whole-farm revenue insurance program to the USDA-Risk Management Agency (RMA), which was approved in October 2007. The program will provide our farmers with access to federally subsidized crop insurance and will help farmers manage their business risk and help protect them against revenue losses due to natural disasters and market fluctuations.

MARKET DEVELOPMENT BRANCH

Todd Low, Manager (*From December 2006*)

The mission of the Market Development Branch is to facilitate the development of the agricultural industry, consisting of commodity groups of agricultural producers and food processors, through the expansion of new and existing markets.

Major activities during FY 2007 (FY07) were:

Matching Funds Promotional Contracts

This is the fourth fiscal year that the branch implemented a new procedure to solicit and award marketing funds under the State of Hawaii Request for Proposal (RFP) process. The commodity groups that participated included the Hawaii Food Manufacturers Association, the Hawaii Orchid Growers Association, the Hawaii Papaya Industry Association, the Kona Coffee Cultural Festival, the Hawaii Export Nursery Association, the Big Island Farm Bureau, the Hawaii Coffee Association, the Hawaii Cooperative of Organic Farmers, the Hawaii Tropical Fruit Growers Association, and the Hawaii Farm Bureau Federation.

Robert and Janise Stanga, co-owners of Hamakua Heritage Farm at the Waikalua Farmers' Market shown during filming of the final episode of Bravo's Top Chef 2007 in Kohala.



The applications fell into three predetermined categories:

1. Distribution systems focusing on encouraging Hawaii ag businesses to pool resources, at least four companies, in order to improve efficiency in transportation/shipping, distribution, sales representation, or consolidation issues. There were three awards in this category.
2. Mainland and international trade shows focusing on a Hawaii-theme exhibit with a minimum of four unrelated companies attending the trade show. There were six awards in this category.
3. Industry education and promotion of agriculture focusing on producer's competitiveness and human capital capacity building; and marketing efforts or hosting events supportive of Hawaii's agriculture. There were 11 awards in this category.

The program received 16 applications from nine trade associations; of which 15 were funded for a total of \$142,300. Based on previous experience, this program is expected to support an estimated \$3 million in annual sales.

Seals of Quality Program

MDB launched the Seals of Quality (SOQ) program in May 2006 with 12 companies representing the cream of the crop of Hawaii's agricultural producers. The SOQ program was established to protect the integrity and value of the marketing cachet for Hawaii branded farm and "value-added products." Products with this seal are genuine, Hawaii-grown or Hawaii-made premium products, a guarantee that is enforced by the State of Hawaii. MDB was able to double the number of participants in the SOQ program during FY07 and added photos of each company to their digital assets for marketing and further development of the program. MDB promoted the SOQ program through a new SOQ webpage and product displays at the 2006 Hawaii Tourism Authority (HTA) Conference, the American Dietetics Association, the 2006 Hawaii Agriculture Conference, the Hawaii Tropical Floral Council Conference, the Pacific Rim Incentive Meeting Exchange (PRIME) dinner event, Top Chef event, "Ag Awareness Day" at the State Capitol, "Ag in the City" event at City Hall, the Wahiawa Pineapple Festival and a Hilo Chamber of Commerce event, among others. Continued promotion projects will focus on the online and television channels.

More information on the SOQ program is available on the HDOA website at:

<http://www.hawaii.gov/hdoa/add/soq>



Don Saaga and Spencer Kamauoha, President and Vice-President of Kamauoha Farms at their booth in the Natural Products Expo West Show in Anaheim, CA, March 2007.

Local Market Promotions and Activities

Hawaii Lodging, Hospitality, and Food Service Expo, Honolulu

Products that were sampled at the HDOA exhibit were wasabi from Yamashiro Farm, chocolate from Waialua Coffee and alii mushrooms from Hamakua Heritage Farm. The event attracted 5,500 buyers-chefs, caterers, grocers, convenience stores, hotels, military, and others.

Hawaii State Farm Fair, Kapolei

The traditional farm fair was organized by the Hawaii Farm Bureau Federation (HFBF) to showcase Hawaii's agriculture. The HDOA contributed in various ways including educational booths displaying the various activities of the department in keeping our plant and animal industries healthy, minimizing the introduction of invasive species, promoting the production and consumption of Hawaii's fruits and vegetables, maintaining viable measurements and standards for Hawaii's commerce, and exposing the public to the ornamental and business aspects of Hawaii's aquaculture.

Made in Hawaii Festival, Honolulu

MDB coordinated the chef demonstrations at the Made in Hawaii Festival at the Neal Blaisdell Center, which attracted 33,000 people. Participating chefs included Derek Kurisu of KTA Superstores, Elmer Guzman of Poke Stop, Grant Sato of Kapiolani Community College, Fred DeAngelo of Ola, Mike Imada of Hyatt Regency Waikiki, Eldon Ricardo and Michael Miller of Tiki's Bar & Grill, Mike Irish of Halm's Enterprise, Almar Arcano of Formaggio and Andy Nelson of Neptune's Garden. The chefs prepared dishes made with island-fresh products. The area was decorated with Hawaii-grown fruits, vegetables, flowers and foliage from our local farmers.



Wahiawa Pineapple Festival, Wahiawa

MDB set up a SOQ booth at the Pineapple Festival at Wahiawa District Park in the heart of Wahiawa town. The booth displayed fresh and value-added SOQ products. The event featured a parade, arts and crafts displays, games, and activities for the children, and pineapple culinary creations from celebrity chefs.

Mainland and International Promotions and Activities

Natural Products Expo West Trade Show, Anaheim, CA

Hawaii participated in the world's largest natural, organic & healthy products trade show, with more than 47,000 attendees and 3,620 exhibitors. With the natural & organic products industry growing by 9.1 percent annually mirrored national trends toward healthier lifestyle choices from grocery stores to pharmacy to home.

Hawaii Health Ohana, Oils of Aloha, Kamaouha Farms, Hawaii Orchid Growers Association, NOH foods, Hawaiian Herbal Blessings, Maui Excellent, Liko Lehua, Pharm East, Latitude 22, Hawaiian Natural Tea, Maui Natural Sugar, and Kauai Coffee participated in the Hawaii exhibit.

This show is open to a professional audience of manufacturers, buyers, retailers, and media. It is not open to the general public.

Produce Marketing Association (PMA) Convention and Exposition, San Diego, CA

Ten companies filled two 20' x 20' island booths at the PMA Expo in San Diego, CA. Companies consisted of Alembic International, Crown Pacific International, Fat Law's Farm, Happy Hawaiian Plants, Hawaii Papaya Industry Association, Hawaii Tropical Fruit Cooperative, Hawaiian Sunshine Nurseries, Maui Onion Growers Association, Ohana Banana Farm, and Wailea Agricultural Group.



Ken Kamiya, President of Kamiya Gold, Inc., at his packing facility in Laie, Oahu. Kamiya Gold was one of the founding companies in the Hawaii Seals of Quality program.

Young Tarring and Brandee Okinaga, Vice-President and Associate of Ohana Banana Farm, at their booth in the Produce Marketing Association (PMA) Expo in San Diego, CA, October 2006.





HAWAII AGRICULTURAL STATISTICS BRANCH

Mark Hudson, *State Agricultural Statistician/Director*

The Hawaii Agricultural Statistics (HAS) Branch is a cooperative effort between the Hawaii Department of Agriculture and the National Agricultural Statistics Service, U.S. Department of Agriculture. This partnership, spanning four decades, allows the efficient use of state and federal resources, while at the same time providing a comprehensive array of agricultural intelligence and reducing respondent burden.

Major activities of the branch included data collection, analysis, and timely publication of agricultural statistics of the State. The result of these efforts was a measure of total farm-gate estimated value of \$582 million during 2006. Most of the data collection efforts were in the diversified agriculture sector, which was valued at \$456 million in 2006.

Activities during FY07 included the following:

- ◆ Completed Census of Agriculture Area Coverage Survey.
- ◆ Collected and assembled land, water, sales and employment data to derive a measurement of the economic impact on 136 select reservoirs statewide.
- ◆ Published foreign and mainland agriculture export numbers (first time ever) in the Hawaii Agricultural Exports Release.
- ◆ Published 130 reports.
- ◆ Made over 15,000 individual contacts via personal interviews, telephone, and mail questionnaires.
- ◆ Distributed more than 40,000 releases to farmers, other individuals, businesses, universities, and governments worldwide.
- ◆ Answered more than 1,000 individual requests for information by mail, telephone, and office handouts.

Statistical reports from HAS follows the narrative portion of this annual report.

The reports are also available on the HDOA website at: <http://www.hawaii.gov/hdoa/> or free e-mail subscriptions are available at <http://www.usda.nass.gov/sub-form.htm>

MARKET ANALYSIS & NEWS BRANCH

The Market Analysis and News Branch (MANB) is responsible for enhancing the effectiveness and efficiency of agriculture by conducting economic, market and business feasibility research, evaluating the efficiency and effectiveness of market development programs, collecting data on agricultural commodity shipments, supply and wholesale prices and disseminating information through various media. Through these functions, MANB assists the state's agricultural industry in its development and expansion efforts and provides sound input for program planning and policy making within and outside the department.

MANB is tasked with two primary, yet distinct functions. The first involves research on all market aspects of agricultural products. Towards this end, MANB conducts some ten research or program evaluation studies annually. The second function is carrying out the market news program, jointly with the Market News Branch of the Agricultural Marketing Service, U.S. Department of Agriculture. This program provides up-to-date information on current market conditions – wholesale market prices throughout the state, movement of fresh fruits and vegetables, and supply and demand information on different products.

Activities and accomplishments for FY07 included the following:

- ◆ Completed and jointly published a study entitled "Do Hawaii Producers Pay Higher Freight Costs for Agricultural Shipments to the U.S. Mainland Market Than Their Foreign Competitors?"
- ◆ Completed and jointly published a study entitled "Comparative Advantage of Selected Agricultural Products in Hawaii: A Revealed Comparative Advantage Assessment."
- ◆ Completed a study entitled "Fresh Produce Inshipment Trend and its Implications on Hawaii's Food Security."
- ◆ Completed annual estimation of Hawaii's fresh fruit and vegetable inshipment for the 2006 calendar year.
- ◆ Completed a preliminary estimate of the potential economic impact on crop production of the varroa mite infestation.
- ◆ Conducted research for the AGR-Lite insurance project proposal formulation for Hawaii and contributed to the AGR-Lite insurance project's "Expert Input" for developing risk rating for Hawaii session.



- ◆ Provided non-confidential data, study briefs and research papers to individual requests from the public and from government personnel intra- and interdepartmental.
- ◆ Continued to collaborate with the National Agricultural Statistics Service (NASS) and the National Association of States Department of Agriculture (NASDA) in enhancing the data collection efforts of the MANB.
- ◆ Continued to collect, compile, publish and disseminate weekly reports on a timely basis with limited personnel. The reports include:
 - Honolulu Wholesale Prices of Fresh Fruits and Vegetables;
 - Neighbor Island Wholesale Prices of Fresh Fruits and Vegetables;
 - Weekly Honolulu Arrivals of Fresh Fruits and Vegetables;
 - Honolulu Barge Arrivals; and
 - Honolulu Wholesale Egg Market.



AGRICULTURAL LOAN DIVISION



Dean Matsukawa
Administrator

The Agricultural Loan Division administers the Agricultural Loan Program and the Aquaculture Loan Program. The primary objective is to promote the development of the State's economy by stimulating, facilitating, and granting loans to qualified farmers, ranchers, aquaculturists and food manufacturers. The division also serves as a safety net for agriculture and aquaculture industries by providing assistance in times of emergency.

The program strives to work with private lenders through participation loans and providing loan guaranties to increase the amount of funding available to agriculture and aquaculture industries. The program also provides direct financial assistance to those that are unable to obtain financing from conventional sources. The program is self-sufficient, operating through interest collections, and is able to achieve its objective of growth, development and preservation of the agricultural and aquacultural industries without any taxpayer funding. Administration of the program requires a balance between providing financial assistance while ensuring that loans have a reasonable expectation of repayment.



The Agricultural Loan Division is committed to the growth, development, and well being of the agricultural and aquacultural industries in Hawaii. For fiscal year 2007, the division provided 24 loans, totaling \$1,206,900 in low interest financing for agriculture and two loans totaling \$42,500 for aquaculture. The majority of the loans were emergency loans to help farmers recover from the flooding and earthquake that affected the State in 2006. The early activation of the emergency loan programs resulted in strong demand for operating loans to assist farms in their recovery.

The division's mission is to support economic development and the support of the agriculture and aquaculture industries. Agriculture and aquaculture industries continue to face many challenges such as global competition, increasing costs, increasing regulations, adverse weather and lack of affordable land. Agriculture can no longer only adapt or react to these changes/situations but must become proactive, visionary and embrace these new realities and take advantage of potential opportunities. The recent trend focusing on healthy locally grown produce provides additional choices for consumers and an opportunity for Hawaii farmers. The rise of nutraceuticals may also provide an opportunity for farmers to grow non-traditional crops. As the agricultural and aquacultural industries evolve, the division must also adapt to the needs of the farm and aquaculture communities. The division will continue its outreach to increase awareness of the program and will continue to serve as a resource and safety net to these industries.

Major activities and accomplishments of the program for FY07 include the following:

- ◆ Approved 26 loans for \$1.249 million during FY07. The loans helped farmer and aquaculturists retain or increase acreage by 3,828 acres. The division's loans also helped to preserve or increase employment for 275 farm employees.
- ◆ The division's loan portfolio as of June 30, 2007 was valued at \$16.63 million with 202 loans booked. The loan breakdown by county is as follows:
 - Hawaii County \$6.48 million
 - Oahu County \$5.07 million
 - Maui County \$3.31 million
 - Kauai County \$1.77 million

Left: The Agricultural Loan Division provided financing to Sam and Tony Bayaoa to install irrigation lines and to purchase a propagation greenhouse to expand their protea plantings on their farm in Kau.



Above: The earthquake of October 15, 2006 damaged the Kohala Ditch irrigation system on the Big Island. The Agricultural Loan Division activated its Emergency Loan Program and provided Alvin Kawamoto with funds to purchase a county water meter and install water lines to provide water for his cattle ranch in Kohala.

- ◆ Collected \$3.34 million in FY07. Of the amount collected \$692,256 was in interest and \$2.649 million was in principal.
- ◆ Modified eight loans during FY07 for a variety of purposes to assist farmers including subordination or releases of collateral, payment relief, etc.
- ◆ Approved a \$400,000 participation loan with a private lender to provide assistance for a dairy operation. The participation loan is designed to increase the amount of funding available to farmers, ranchers and aquaculturists by providing funds in cooperation with private lenders to stretch State funds while providing a lower blended interest rate to improve the operation's cash flow.
- ◆ The Emergency Loan program remained in effect to assist qualified farmers in recovering from heavy rains and flooding which occurred in early 2006. The division received HDOA's Team of Year award for its work on the flood disaster which affected the State from February to April 2006.
- ◆ Activated an Emergency Loan program for the earthquake which occurred in October 2006 near the island of Hawaii.



AGRICULTURAL RESOURCE MANAGEMENT DIVISION



Brian Kau, P.E.
*Administrator/
Chief Engineer*

The Agricultural Resource Management Division (ARMD) works to ensure that the state has adequate and reliable sources of agricultural water, farmland, infrastructure for farming, and agricultural-related processing facilities. The division provides administrative oversight over a majority of state agricultural land in production, processing facilities, and several irrigation systems statewide.

By maintaining and operating abandoned plantation irrigation systems, the division supports and encourages the development and expansion of diversified agriculture on former mono-crop plantation lands.

Activities for FY07 included the following:

October 15, 2006 is a day that will remain prominent in ARMD staff memories for decades to come. Earlier in the calendar year, severe rainfall and flooding caused the division to enter into emergency mode to address a reservoir safety issue on Oahu. Issues relating to this event were being addressed when the earthquake hit. An already taxed division staff now had two issues to address with no additional internal resources.

The impacts of the earthquake to the Waimea and Honokaa/Paaui Irrigation system (a.k.a. Lower Hamakua Ditch or LHD) were catastrophic. Inflow to both systems ceased due to many problems, including severe intake damage and massive landslides that covered long portions of open ditch. With help from local farmers and residents, State Civil Defense, Air National Guard, Army National Guard, Kulani Correctional Facility, Hawaii County Department of Water Supply, the Hawaii County Mayor, Hawaii County Civil Defense, U.S. Army Corps of Engineers, Natural Resources Conservation Service, U.S. Department of the Interior's Bureau of Reclamation, and others, the open ditches were cleared, a pump was placed into service, reservoirs were inspected for structural damage, and emergency repair work was undertaken.

The highest priority was to inspect tunnels from both systems for damage as soon as possible. Aftershocks were still rippling through the area, some higher than magnitude 3. The firm, Yogi Kwong Engineers, LLC stepped up to the plate and made plans to perform inspections of all of the tunnels. Literally putting their lives on the line, they were able to provide critical information to the department that allowed the creation of a priority list of projects that needed to be addressed.

Another noteworthy project was the installation of a temporary bypass flume to replace a wooden flume that had failed as a result of damages sustained from the earthquake. Funding for these repairs and all the other projects were provided by the Department of Budget and Finance, Natural Resources Conservation Service, State Civil Defense, and the Federal Emergency Management Agency. These efforts provided uninterrupted service to the Waimea farmers who were then asked to voluntarily reduce their water usage by 10 percent for precautionary purposes. The department anticipates the completion of all emergency repair projects by midyear 2008, funding permitted.

Unfortunately, although the emergency work effort on the LHD system was no less extensive, the damage was significantly greater and in more remote areas. The department continues to work under a Governor's emergency declaration to restore full flow to the LHD as soon as possible.



Structural work in progress at the Waima Tunnel Stream Crossing, Waipio Valley, Island of Hawaii



Additional funding is being requested as the work continues and portions of the system are being brought online. To date, a significant blockage at the Waima stream crossing has been cleared and structural repair work on the roof has begun. The Koiawe intake has been preliminarily cleared and water from this intake has been reintroduced to the LHD system. The upper most intake, Kawainui, has also been preliminarily cleared; however, significant damage at the Alakahi intake is preventing flow from passing this point.

The Alakahi intake sustained the greatest damage, by far, of all the pieces of either irrigation system. Massive landslides in this river valley buried the intake under thirty to one hundred feet of debris and collapsed portions of the intake tunnel. The first phase of remedial action for this intake is being undertaken now and should remove the landslide debris and collapsed portions of the intake tunnel. We anticipate this will allow water from Kawainui to pass through the Alakahi intake and join the flow provided by Koiawe.

Under a best case scenario, the department hopes water will be able to pass through the Alakahi intake by the end of 2007 or early 2008. The second phase of the reconstruction is anticipated to rebuild the Alakahi intake and tunnel structure and finally reintroduce the intake into full service. We also hope to provide some hardening of the rebuilt intake to mitigate future damage from landslides and earthquakes.

2007 was also a year of renewing partnerships with the water users in Waimea and Waimanalo. An informational working group was created to improve communication between the farmers and the department. This effort has led to stronger ties to the community and the ability to rapidly disseminate information regarding the status of the Waimea Irrigation System. In addition, early input from constituents allows the division to create more efficient designs for improvement projects to better serve the farmers.

Massive rainfall earlier in the year led to significant damage to the Waimanalo irrigation system's collection system in Maunawili Valley. The department was fortunate to receive a \$6 million capital improvement project appropriation to address these issues. In the meantime, however, abnormally dry weather has caused the water levels at the Waimanalo reservoir to fall rapidly. Through exceptional volunteerism by the Waimanalo farmers, the division was able to perform weekend work to maximize water transmission to the reservoir. In addition, creative thinking has led to novel ways to reduce the impact of floating debris clogging siphon intakes. This collaborative effort has allowed the system to hold off on a 30 percent water usage reduction until early September compared to last year's 30 percent reduction issued in mid-July. We

hope to use these successes to move our Molokai partnerships into the future.

The new non-agricultural park lands program continues to progress. Administrative rules to govern the program have been created in draft form. Public hearings to receive comments on the new rules are scheduled for early October 2007. If all goes well, we hope to have the rules adopted by early 2008. In the meantime, the department has executed an agreement with the Department of Land and Natural Resources (DLNR) that allows lease revenue to be deposited into the non-ag park lands program accounts in return for temporary property management services provided by DLNR for a fee. The accumulation of funds will allow the program to hire its own property manager and support staff to begin managing the program. In addition, we reviewed and inspected the Oahu, Maui, and Kauai leases held by farmers identified as bona fide and are in the process of creating a preliminary transfer list of these tenants.

FY07 continues the successful trend in securing partnerships for the division's programs and goals. We continue to participate in partnerships with the Natural Resources Conservation Service, U.S. Army Corps of Engineers, U.S. Department of the Interior's Bureau of Reclamation, and State of Hawaii Department of Defense's Civil Defense Division. We also welcomed a new partnership with the County of Hawaii. This year, the department has received more than \$6 million in federal and other grant funding that has been or will be applied to the planning and design of new irrigation systems and renovation of our existing infrastructure.

As HDOA's largest system, the Molokai Irrigation System is looking forward to long awaited improvements which will increase efficiency in transportation of irrigation water. Improvements will include replacement of the Supervisory Control and Data Acquisition (SCADA) system, telemetry system, high voltage cables through the five-mile-long Waikolu Tunnel, switchboards and motor controls, gallery lighting in the tunnel, and pressure, flow, and power consumption meters on various components throughout the system. This SCADA system will be able to collect data from various sensors at remote locations and send it to a central computer. The department will have the ability to remotely monitor pressure, flow, power consumption, and water levels, control gate valves and on-off pump switches, and receive alarms in the event of high pressure or pump failure. These features will allow the department to greatly reduce time spent identifying and responding to future problems that may occur and focus more time maintaining the Kualapuu Reservoir, main transmission line, distribution system, and meters. Improvements to the system are nearing design completion and construction is scheduled to begin early next year.



Construction of the Paaui Distribution Pipeline Improvements Phase 2 Project was completed in March of 2007. This phase of work included installation of approximately 4,700 linear feet of 12-inch pipe along Mamalahoa Highway and 220 linear feet of a special 12-inch pipe which spans across the Waipunahina Bridge. This project completes the new distribution system which services farmers in Kalopa and Paaui. The total system consists of over four miles of pipeline varying in size from four inches to 16 inches in diameter. Once the October 15, 2006 earthquake damages are repaired and flow is restored in the system, the agricultural community will have a more reliable source of irrigation water with fewer interruptions. The department foresees the Lower Hamakua region as a major contributor to the state's agricultural economy in the near future.

The state's agricultural park (ag park) program continues to reach out to qualified farmers who are interested in becoming a lessee under this program. During FY07, 10 lots in five ag parks were offered to interested farmers. Seven of the new lessees were assignments, three were negotiations, and all are experienced farmers who are engaged in the production of nursery plants, potted orchids, and aquaculture operations. In addition, the division renewed one revocable permit.

Frank Sekiya owns and operates Frankie's Nursery in the Waimanalo Agricultural Park, a six-acre nursery that stocks seedlings for exotic fruits and vegetables. Plants used to be a weekend hobby, but Sekiya says "his interest turned into an occupation". Sekiya is an expert on tropical and subtropical plants and travels to Southeast Asia to explore new varieties of fruit. As he travels, he ships back bud bark

which he can graft onto his seedlings, producing a better stock for planting in the islands. He also ships seeds and seedlings out of state, as well as inter-island. Frank has also conducted grafting classes at numerous state farm fairs.

Nora Sisouphanthong, dba Lao Aquafarm II, received an ag park lease through a public drawing in 1998 and began aquaculture development of her farm lot in 1999 in our Kahuku Agricultural Park. Lao Aquafarm II presently operates 15 fish tanks, each 20' x 40', with plans to build another five tanks in the next year. Nora produces approximately 200 lbs. weekly of Chinese Catfish, Silver fish and Sunfish (tilapia). Additionally, her 12.9-acre farm includes about five acres of apple banana, much of which was destroyed by a recent brush fire that also consumed approximately six acres of ti plants grown on an adjacent parcel by Carol Anamizu. Both Kahuku lessees, however, have begun the task of clearing away the debris and restarting their respective croppings.

Nora got her start in aquaculture through a workshop co-sponsored by OHA through the UH Extension Service in 1992. She started the aquafarm in Waianae in 1994 and moved to Kahuku upon securing a long-term lease within the ag park. The farm presently uses 14 million gallons of water annually through the Kahuku Irrigation System for its aquaculture and truck crops.

Nursery Solutions, Inc. is located in the Keahole Agricultural Park. A tenant since 1999, Nursery Solutions, Inc. specializes in producing native Hawaiian plants and a wide range of exotic species used in large-scale native Hawaiian reforestation, commercial forestry and



Kualapuu Reservoir, part of the Molokai Irrigation System



Nursery Solutions, Inc. in the Keahole Ag Park on the Big Island specializes in Native Hawaiian plants.

Left: Juanito Pataray, nursery manager for Nursery Solutions looks over plants in the greenhouse.

Below: Growing racks.

landscape projects. Experts in native Hawaiian plants, Nursery Solutions, Inc.'s in-house research scientists are constantly developing highly successful, species-specific techniques in seed germination and unique methods of seed storage that are effective in reducing degradation by insects and fungus. With a state-of-the-art sowing machine, Nursery Solutions, Inc. has the capacity to produce two million seedlings per year for clients including Queen Emma Foundation, Kamehameha Schools, and Parker Ranch.

In addition to the seedling operation, Nursery Solutions, Inc. has been cultivating vanilla plants for the production of beans for the past several years. While it is a long and highly technical process, initial trials have been very successful and a full, healthy crop is expected in upcoming years that may make Nursery Solutions, Inc., Hawaii's first large-scale producer of real Hawaii-grown vanilla.

Lease dispositions and irrigation system data may be found on pages 59 and 60.





ANIMAL INDUSTRY DIVISION



**James Foppoli, Ph.D.,
DVM**
*Administrator/
State Veterinarian*

The mission of the Animal Industry Division is to protect Hawaii's livestock and poultry industries and public health by preventing disease introductions and detecting and controlling economically important diseases or pests within the state. The division conducts: animal disease surveillance, epidemiology and control; inspection of all animals and birds entering the state; livestock brand registration; voluntary livestock disease certification and premise registration programs; laboratory diagnostic services; and dog and cat quarantine to reduce the risk of rabies introduction.

An important focus of the division continues to be animal health emergency management, especially with respect to avian influenza virus. Public health and environmental programs aimed at preventing the introduction of foreign animal diseases into the state continue to be important functions of the division.

Hawaii's statuses for State-Federal Cooperative Disease Control Programs during Fiscal Year 2007 (FY07):

- ◆ Brucellosis Free, cattle and swine
- ◆ Pseudorabies Free, Stage V
- ◆ Bovine Tuberculosis, Accredited Free

Hawaii is also recognized as free of bluetongue virus and anaplasmosis and surveillance programs for these diseases are ongoing to insure that the free status is documented and maintained. No new livestock and poultry disease agents were detected during FY07; however, Taura Syndrome Virus, a reportable disease was detected at an Oahu shrimp farm.

The division continues to encourage livestock owners to register their premises as part of the National Animal Identification System. The University of Hawaii, College of Tropical Agriculture and Human Resources has been contracted for a second year to hold outreach sessions for producers on Oahu and neighbor islands.

Continuing activities relating to voluntary disease control programs include scrapie in sheep and goats, Johne's disease in beef and dairy cattle, and bovine tuberculosis in feral swine on east Molokai. Stringent import requirements remain in place for birds entering Hawaii in an effort to reduce the chances of West Nile virus introduction.

The division received cooperative agreement funds from the United States Department of Agriculture, Animal and Plant Health Inspection Service, totaling \$272,824 during FY07. The agreements supported specific activities such as the voluntary scrapie herd and flock certification program (\$23,000), swine health protection (\$46,850), foreign animal diseases (\$15,100), Johne's disease surveillance and control (\$19,374), National Animal Identification System (\$79,500), avian influenza (\$59,000) and bovine tuberculosis (\$30,000).

RABIES QUARANTINE BRANCH

Isaac M. Maeda, D.V.M., Program Manager

The number of dogs and cats entering the State leveled out in Fiscal Year 2007 (FY07) for the first time since the start of the Five-Day-or-Less program on June 30, 2006. The total number of dogs and cats dipped slightly from 8,966 in FY06 to approximately 8,804. This represents an approximate 1.8 percent decrease from the 8,966 animals that entered the State in FY06. Nevertheless, the entries represent an 85 percent increase from the 4,771 animals that entered Hawaii prior to the start of the Five-Day-or-Less program in FY03. In addition, 304 animals transited through the State resulting in approximately 9,110 animals that were processed through the program in FY07. (See table on page 20)

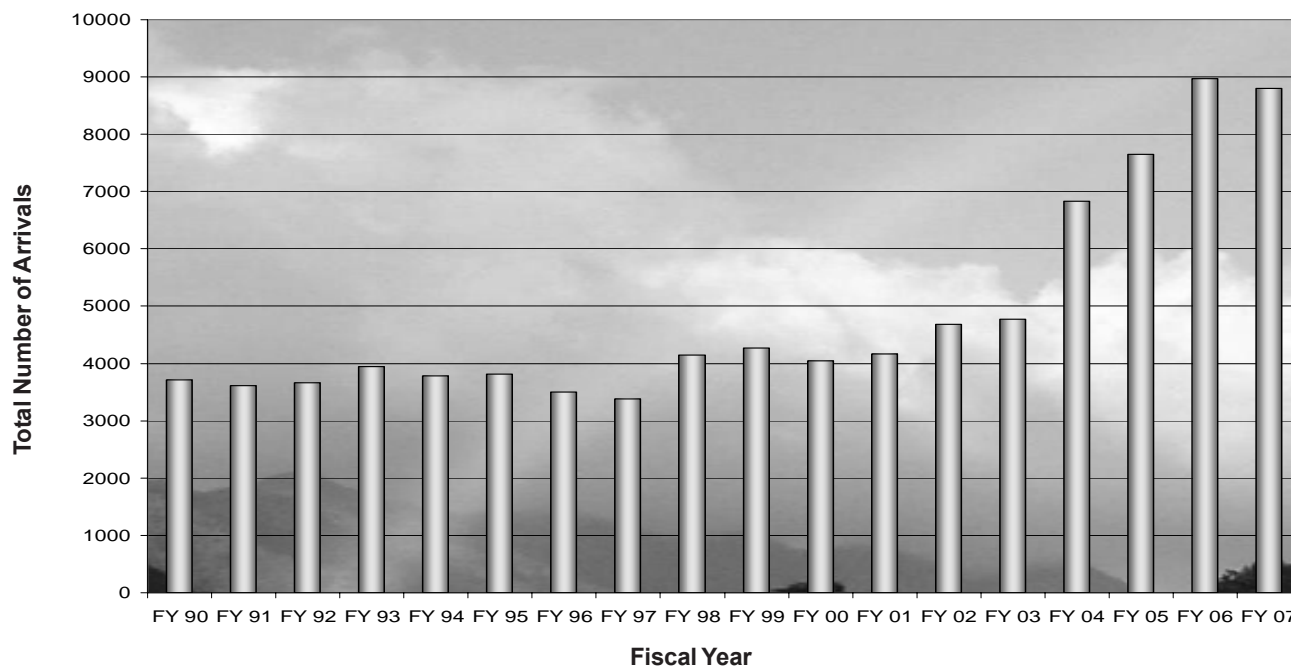
The following are rabies quarantine statistics for cats and dogs arriving between July 1, 2006 and June 30, 2007 (FY07):

PROGRAM	NUMBER	PERCENT
120-day	525	6%
5-Day-Or-Less*	996	11%
Airport Release	7,283	83%
Total	8,804	100%
Transiting Through Hawaii	306	

* Includes dogs and cats arriving early



Total Dog and Cat Entries by Fiscal Year



Since the Five-Day-or-Less program was implemented in June 2003, the rabies quarantine program has transitioned away from a "quarantine only" system to one that permits the release of qualified dogs and cats directly from the airport when specific pre-entry requirements are met. Such requirements include:

- ◆ Positive pet identification (electronic microchip);
- ◆ A minimum of two pre-entry rabies vaccinations;
- ◆ Rabies serological testing to measure vaccination response and 120-day waiting period after a passing test before entry into the state; and
- ◆ Inspection upon arrival

The transition of the program to direct animal release at the airport has increased the workload for the Veterinary, Inspection, Clerical and Accounting staff. Staff and computerized databases are heavily relied upon to monitor and verify information relevant to qualification. Considerable time is spent reviewing documents, pre-qualifying pets, processing payments, receiving and inspecting pets and addressing the needs, questions and concerns of the general public. The clerical, veterinary and inspection personnel spend a significant amount of time e-mailing and speaking with pet owners on the phone or in person, explaining program requirements. It is also estimated that about half of all submitted essential documents require follow-up contact with veterinarians or pet owners due to deficiencies. Although approximately 7,283 dogs and cats were released at the airport in FY07,

this number does not reflect the workload of the total number of pet documents processed, as the database currently holds over 56,000 active files of animals for the Five-Day-or-Less program alone. With more than eight percent of arriving pet owners not submitting the required pre-arrival documents beforehand, screening and verification at the airport facility becomes a necessary responsibility not required in the past. Although the Five-Day-or-Less program has been very successful, it is labor intensive for documentation and verification when compared to traditional 120-day quarantine. Enhancements to the computer system are ongoing to effectively manage the data and processing of Five-Day-or-Less dogs and cats. In addition, the Livestock Disease Control Branch port veterinarian and livestock inspectors provide critical support to the program by assisting rabies quarantine veterinary technicians in processing dogs and cats released at the airport seven days a week.

The department routinely updates its website and information brochure dedicated to Hawaii's rabies quarantine program that contain all of the information and forms relating to quarantine and the importation of cats and dogs. Pet owners may access pre-arrival FAVN rabies serological test results and Five-Day-or-Less quarantine-eligible dates at this HDOA website. Checklists for the Five-Day-or-Less program are available at the site to assist pet owners of both resident pets and non-resident dogs and cats with preparations to qualify for this reduced quarantine option.



Under the Five-Day-or-Less program, pets may be released at Honolulu International Airport if they complete pre-arrival requirements that include (but are not limited to):

- ◆ Two rabies vaccinations, with the last vaccination administered no more than 12 months prior to arrival if it was a one-year vaccine, or no more than 36 months prior to arrival if it was a three-year vaccine. (The two vaccinations may not be administered within 90 days of each other; and the last vaccine must be administered no less than 90 days prior to the pet's entry into the state)
- ◆ Microchip implantation for identification purposes;
- ◆ OIE-FAVN rabies blood test results with sufficient level of rabies antibodies;
- ◆ 120-day pre-arrival waiting period between the time the lab receives the blood sample and the earliest date the pet may enter the state (the pre-arrival waiting period is necessary due to the long and variable length of rabies incubation, where the virus may hide in an animal before clinical signs of the disease become apparent); and
- ◆ Pet owners must also submit required paperwork more than 10 days before the pet's arrival.

Pet owners that do not submit the required documents have their pets held in quarantine for up to 120 days until all requirements are completed and documents submitted.

Approximately 94 percent of arriving dogs and cats qualified for the Five-Day-or-Less program in FY07. Furthermore, of the approximately 8,279 pets that qualified for the Five-Day-or-Less program, 7,283 pets (88 percent) qualified for direct release upon arrival at Honolulu International Airport. In comparison only six percent (525) of the arriving animals were quarantined for 120 days. Midway in FY06, 30-day quarantine was eliminated as a distinct category since animals may qualify for quarantine periods between zero (airport releases) to 120 days under the early arrival provision in the Five-Day-or-Less program. Animals previously in the 30-day category are now included within the Five-Day-or-Less program as arriving early by 30 days.

The daily population of animals occupying the animal quarantine station at any given time during FY06 ranged between 182 and 341 animals. The fluctuation in daily animal population at the station was lower and varied between 248 to 352 dogs and cats during FY06. The average daily population was higher in FY06 than FY07.

In FY07, the Department initiated a system that allows dogs and cats to enter Hawaii directly at Kona International Airport at Keahole, Kahului Airport on Maui and Lihue Airport on Kauai. Quarantine approved veterinary facilities serve as private contractors to inspect animals upon arrival at these airports because the rabies quarantine program does not have personnel on islands other than Oahu. A

pet owner must apply for a Neighbor Island Inspection Permit (NIIP) to fly with their dog or cat directly to one of these airports from the continental U.S. The following are requirements to obtain a NIIP:

1. Every dog or cat must meet all the requirements listed on the "Checklist for the Five-Day-or-Less Program" except that all required documents must be submitted earlier; 30 days or more before the intended date of arrival.
2. Owners must submit the following documentation to the Animal Quarantine Station 30 days or more ahead of the planned arrival:
 - ◆ Completed and notarized Dog & Cat Import Form, AQS 278.
 - ◆ Original rabies vaccine certificates for the two most recent vaccinations.
 - ◆ Payment of \$165 in cashier's check or money order.
 - ◆ Flight information.
 - ◆ A letter from the owner requesting Direct Airport Release at either "Kona" or "Kahului" or "Lihue".
3. Owners must make reservations for inspection with approved contractors. Contractors will then send a confirmation to the Animal Quarantine Station that they have agreed to perform the inspection and release procedure. Owners are responsible for the additional fees to the contractor for this service.
4. A Kona, Kahului or Lihue Neighbor Island Inspection Permit will be mailed to the owner once the Animal Quarantine Station has:
 - ◆ Received the above required documents, information and payment (see 2 above);
 - ◆ Confirmed the pet meets all of the requirements for the Five-Day-or-Less program and neighbor island inspection and release; and
 - ◆ Received confirmation from Kona Veterinary Service, Maui Humane Society, South Shore Veterinary Care or Kauai Humane Society that they will meet the pet.
5. The original Neighbor Island Inspection Permit must accompany the dog or cat on the aircraft and be submitted to the inspector upon arrival in Hawaii.

Pet owners are informed that all airlines may not be participating in flying dogs and cats with Neighbor Island Inspection Permits to Kona, Kahului and Lihue.

In addition to rabies exclusion, the quarantine program continues to monitor dogs and cats carefully for ticks exotic to Hawaii. *Ixodes* spp ticks were discovered and eliminated from two animals arriving in Hawaii during FY07. This genus has been reported to potentially serve as a vector for Lyme disease and other diseases of veterinary and human medical importance. *Rhipicephalus sanguineus*, the brown dog tick, is the only tick established in Hawaii associated with dogs.



LIVESTOCK DISEASE CONTROL BRANCH

Jason D. Moniz, D.V.M., Manager

The Livestock Disease Control Branch prevents, investigates, conducts surveillance, controls and eradicates animal diseases that may have serious economic impacts on the state and nation's livestock and poultry industries, some of which impact public health. The branch inspects animals entering the state and insures compliance with division rules and laws pertaining to the control and eradication of animal diseases.

Data tables on animal importation and disease surveillance testing may be found on page 61.

Avian Influenza (AI)

Highly pathogenic Avian Influenza (H5N1) continues to circulate in wild birds and poultry in Asia, Africa and Europe. An AI grant for \$59,000 was received from the U.S. Department of Agriculture (USDA) for Hawaii to continue with its preparedness and surveillance activities in Fiscal Year 2007 (FY07). Funds were used to train microbiologist to run RT-PCR tests, fit and clear personnel to wear Personal Protective Equipment, continue poultry testing for early detection surveillance purposes and continue biosecurity and other outreach activities. To date, no positive AI (H5N1) tests results have occurred in domestic or wild birds in Hawaii or North America.

West Nile Virus (WNV)

An embargo on the movement of poultry and other birds, except chicken hatching eggs and chicken day-old chicks through the U.S. Post Service remains in place. In addition, all poultry and other birds including all hatching eggs and all day-old chicks require a "Poultry and Bird Import Permit" for entry into the state. Those species of poultry and birds capable of producing high WNV virus levels are required to undergo a seven-day pre-arrival quarantine before qualifying for an entry permit. Poultry and other birds arriving in the state not meeting entry requirements are refused entry. In FY07 twelve shipments of poultry or other birds were refused entry or returned by carriers to their origins for failing to meet entry requirements. West Nile virus arrived in the continental U.S. in 1999 and since then it has made its way westward and now affects all states except Hawaii and Alaska.

Bovine Tuberculosis (BTB)

Bovine Tuberculosis free status maintained

The State of Hawaii continues to maintain a "Bovine Tuberculosis Free Status."

Bovine tuberculosis (BTB) a chronic, debilitating disease of cattle, bison, goats, cervids and other animals that can also cause a serious disease in man, is caused by the bacteria Mycobacterium bovis.

State and federal veterinarians test cattle herds annually and manage hunter assisted surveillance of wildlife on

the east end of Molokai, where bovine tuberculosis has been a recurrent problem for the past 60 years. The last BTB infected cattle herd, located on eastern Molokai, was depopulated without further spread in 1997 and no new cases of BTB in cattle have been found.

A hunter assisted survey for BTB in wildlife began in 1998 on Molokai to monitor the prevalence of infection in axis deer, feral swine, feral goats and mongoose. Since the surveillance began in 1998 only infected feral swine have been detected. From 1998 through June 30, 2007, ten feral swine have been found infected. Four of the ten infected feral swine were found in FY07. Trapping used to capture feral swine in areas land owners do not allow hunting may have resulted in the increase in infected feral swine detected during the fiscal year. Thirty-nine total feral swine were tested during FY07. To date, all infected feral swine have been found within a two mile radius of Ualapue where the 1997 infected cow was found. The BTB infection appears to be maintaining itself in the feral swine population in and around the Ualapue to Mapalehu area.

To prevent the potential spread of bovine tuberculosis from eastern Molokai, all cattle east of Kamalo are required to obtain a permit and have an annual negative BTB test to move. All herds are in compliance with established testing and movement requirements. In addition, feral swine movement out of areas east of Kamalo has been prohibited by a quarantine.

A USDA grant for \$30,000 was received in FY07 to continue surveillance in wildlife species on the East End of Molokai, support preparation and shipping of samples to the National Veterinary Services Laboratory and to provide outreach to livestock producers, hunters and the community. The hunter assisted program also reduces the feral swine population in the affected area thereby reducing the risk for transmission.

Bovine Brucellosis

Bovine Brucellosis class free status maintained

Hawaii has been officially classified free of bovine brucellosis since 1983.

Bovine brucellosis is an infectious disease of cattle, bison and elk caused by the bacteria Brucella abortus. Brucellosis can also infect man. During the fiscal year, 8,909 cattle were tested for brucellosis. No suspects or reactors were found. However occasional spill over of Brucella suis from infected feral swine and Yersinia enterocolitica will cause cross reactivity on cattle surveillance testing resulting in herd epidemiological investigations that may include herd testing. These investigations find that in areas where B. suis is endemic in feral swine, a single or few head may become transiently infected but no cattle to cattle spread has been seen and no herd reproductive abnormalities have been found.



Swine Brucellosis & Pseudorabies (PRV) Hawaii maintains free statuses for Swine Brucellosis and Pseudorabies

Brucellosis

Hawaii retained its free status for swine brucellosis during FY07.

Brucellosis in swine is caused by the bacteria Brucella suis. Infected swine experience reproductive problems including abortion and infertility. Brucella suis can cause serious infections in man. No domestic swine herds were found infected in FY07 and as a result Hawaii maintains its Brucella suis free status.

Feral swine in Kona, Hamakua (Hawaii), Kahakuloa (Maui), Ft. Shafter westward through Waianae, the North Shore and Windward (Oahu) are known to be infected with swine brucellosis. Exposure of domestic swine to infected feral swine and the practice of maintaining transitional herds of mixed feral and domestic swine have been the source of all domestic swine brucellosis infections in the past.

In addition to annual testing of all sows and boars over six months of age at slaughter, 25 percent of the herds in the state are randomly selected for testing to determine their brucellosis status. Surveillance for FY07 included 497 domestic swine, 90 transitional swine and 47 feral swine. One percent of the transitional swine and 4.2 percent of the feral swine tested were reactors to swine brucellosis. One transitional herd was quarantined and underwent a test and removal of reactors plan to rid the herd of swine brucellosis.

Pseudorabies

Hawaii maintains a free status for pseudorabies in swine.

Pseudorabies (PRV), a viral infection of swine, causes respiratory disease and reproductive failure. Pseudorabies infection of other species (such as dogs) is typically fatal but humans are not susceptible.

Pseudorabies surveillance testing of 498 domestic swine during FY07 found no infected domestic swine. One transitional herd was determined to be infected. Feral swine on the islands of Hawaii, Maui and Oahu are known to be PRV-infected. Nineteen percent of the feral swine tested in FY07 tested positive for PRV. Infected feral swine are a constant threat to domestic swine herds. Ninety head of transitional swine and 47 feral swine were tested in FY07. A statewide quarantine order prohibits the commingling of feral and domestic swine as well as inter-island movement of feral swine. During the fiscal year one transitional herd was found infected, quarantined and underwent a test and removal of animals that tested positive for the disease to rid the herd of infection.

Transmissible Spongiform Encephalopathies Scrapie

Hawaii continues to be recognized as consistent with the USDA Voluntary Scrapie Certification Program Standards.

Scrapie is a transmissible, insidious, neuro-degenerative disease affecting the central nervous system of sheep and goats. Scrapie has not been diagnosed in goat or sheep flocks in Hawaii.

Hawaii received USDA cooperative agreements continued in FY07 to provide sheep and goat flock owners with educational information, enroll flocks in the status program, conduct surveillance testing on cull and diagnostic animals and provide for some genotype testing. A quarantine order is in place to require change of ownership identification requirements for certain classes of sheep and goats for Hawaii to remain consistent in the National Scrapie program.

Bovine Spongiform Encephalopathy (BSE)

During FY07 BSE sampling continued on cattle exhibiting neurological signs, unknown cause of death and those unable to rise continued. There were no positive test results.

Voluntary Johne's Disease Herd Certification Program (VJDHCP)

The VJDHCP goal is to implement disease control measures to reduce or eliminate Johne's disease from cattle herds and conduct annual surveillance to verify a herd's status. A USDA cooperative grant of \$19,374 received in FY07 was used to conduct Johne's testing of dairy and beef herds, conduct risk assessments, write up individual herd plans and provide outreach during the fiscal year. During FY07, 586 cattle were tested for Johne's disease. Fifteen herds are currently participating in the VJDHCP.

Importation/Exportation of Livestock, Poultry and Other Animals

An embargo on the movement of poultry and other birds into Hawaii through the U.S. Postal Service implemented in September 2002 remains in place. The embargo remains in place to prevent the entry of West Nile virus, Avian Influenza and other avian diseases from entering the state with infected birds.

Inspected and approved for entry into the state: 19,457 head of livestock; 7,477 poultry and other birds; 764,242 day-old chicks and hatching eggs; 11,355 dogs and cats; and 12,127 other animals.

The branch staff conducted 61 compliance investigations, 11 citations were issued, 194 written warnings, and seven animals were refused entry.



VETERINARY LABORATORY BRANCH

Crane H. Hahn, D.V.M., *Program Manager*

The Veterinary Laboratory provides essential services to assist department veterinarians in identifying and controlling diseases affecting livestock and poultry and public health. The Veterinary Laboratory provides a diverse range of diagnostic services. Professional staff is trained in different disciplines such as bacteriology, chemistry, pathology, parasitology and serology. If specialized services are required, laboratory staff members handle and package specimens in accordance with specific shipping regulations to ensure safe and secure transport of specimens.

In the 2007 fiscal year, there was a slight increase in the number of tests performed over the previous fiscal year. Decreases in tests performed in serology were offset by increases in necropsy and clinical pathology. The addition of a Board Certified Veterinary Pathologist (ACVP) has increased the laboratory's expertise and capacity to provide diagnostic necropsies.

Over the last fiscal year, the importance of avian influenza (AI) has been seen both with increased media coverage and the number of samples submitted for testing. The Veterinary Laboratory receives domestic bird samples from a variety of sources including the Livestock Disease Control Branch as well as the Invasive Species Council. The Polymerase Chain Reaction (PCR), performed by the Hawaii Department of Health (HDOH) Laboratory Division, is the test used for detecting the virus. The Animal Industry Division supports HDOH testing through Federal Cooperative Agreement funds. Testing AI samples in-state facilitates a rapid turnaround time for results. In addition, the Veterinary Laboratory began purchasing supplies and equipment during FY07 to perform an avian influenza serologic test (agar gel immunodiffusion) as an additional surveillance method in certain situations.

Impacts from downsizing the state's dairy industry resulted in a slight rise in livestock samples associated with the closing of Mountain View Dairy on Oahu. It is anticipated that there will be a decrease in livestock samples in the next fiscal year due to dairy closures and possible reduction or elimination of federal support for voluntary disease surveillance programs such as Johne's disease and scrapie.

Submissions from the Rabies Quarantine Branch have decreased slightly from FY06. This decrease is likely due to fewer animals held at the program's quarantine station and the number of pets transferred to approved private quarantine facilities. The majority of samples continue to be fecal samples for parasite detection.

All laboratory personnel are recertified to perform specific diagnostic tests such as for brucellosis, equine infectious anemia, anaplasmosis, and Johne's disease, by successfully completing the proficiency testing programs under the oversight of the National Veterinary Services Laboratory.

Data on specimen examinations by the Veterinary Laboratory may be found on page 61.



AQUACULTURE DEVELOPMENT PROGRAM



John Corbin
Manager
(Retired December 2006)

The Aquaculture Development Program (ADP) provides essential support services to encourage further growth and diversification of the aquaculture industry. ADP is a planning, development, and problem-solving organization whose goals are to assist in the start-up of production and service businesses, and to contribute to their success. Specific activities include planning and policy formulation, new business development, permit facilitation, marketing assistance, disease diagnosis and prevention assistance, and co-funding of statewide technical extension.

The mission of ADP is to: prepare and implement state aquaculture plans and policies for the expansion of aquatic farming, and research and technology transfer business; coordinate statewide development activities; and directly assist both public and private sector interests in achieving their aquaculture-related goals, so as to create jobs and diversify the economies of all islands.

Major activities for FY 2007 were:

- ◆ Wholesale product value for the industry was estimated at \$28.4 million for calendar year 2005 according to department statisticians, and continues to be one of the fastest growing sectors of diversified agriculture. 2007 could be projected as nearly \$30 million in gross production.
- ◆ Continued the joint implementation with the Department of Land and Natural Resources (DLNR) of the amended Chapter 190D, HRS, Ocean and Submerged Lands Leasing law by facilitating permit preparation for three additional aquaculture leases off various islands. Prepared annual joint report to Legislature, with DLNR, on status of the ocean leasing.
- ◆ Continued to provide a world-recognized Shrimp Surveillance and Certification Program to the growing shrimp broodstock industry. Held facilitated review of the Program with the industry to identify areas for upgrade and improvement after a second disease outbreak on Hawaii farms. At present there are 15 shrimp broodstock export farms under the surveillance program. During the year we have met with veterinarian and fishery officers from Vietnam interested in understanding our export procedures and standards for their importation of Hawaii broodstock for shrimp production.
- ◆ Participated in the Organizing Committee and sponsorship for the Marine Ornamentals 2008 Conference to be held at Orlando, Florida in February 2008. This international conference is the fifth in a series that originated in Hawaii.

Each year, ADP's aquaculture display attracts hundreds at the Hawaii State Farm Fair.





Jung Hoi Ku of Paradise Shrimp Farm with a basket of shrimp fresh from his ponds.

- ◆ Assisted with import and export permits for aquatic species by farmers on Oahu, Kauai, Maui and Hawaii. Co-sponsored and participated in the Hawaii Aquaculture Association's 2006 and 2007 Hawaii Aquaculture Conference held in July. For the first time, there are significant amounts of koi being imported and exported under specific pathogen-free certification under supervision of the Aquaculture Veterinarian. Additionally, we are now beginning to survey seahorses produced on one Hawaii farm.
- ◆ Promoted the local consumption of aquaculture products by participating in the Hawaii Lodging, Hospitality and Food Service Expo, State Farm Fair, Made in Hawaii Festival, Taste of Hawaii Aquaculture and the Sam Choy Poke Contest. Worked with various internet, television, radio and print media to provide background information, place stories and promote the industry. Continued ADP's electronic industry newsletter, *Aquaflashes*, to get out time-sensitive information which our farmers could use.
- ◆ We have recently hired a new Microbiologist III with a molecular biology background. Provided animal health management services to producers and research organizations statewide, with more than 59 farm visits and 340 analyzed case submissions. Contributed Hawaii's aquaculture experience to a researcher's publication reviewing the development of the Hawaii industry.
- ◆ Co-funded statewide technical extension services to the aquaculture industry (with over 3,600 documented incidents of assistance), in cooperation with the UH Sea Grant Extension Service, leveraging more than \$500,000 in matching funds through the project.
- ◆ Participated in the governing boards and advisory committees of the Center for Tropical and Subtropical Aquaculture, National Association of State Aquaculture Coordinators, Marine and Coastal Zone Management Advisory Group and Hawaii Aquaculture Association.
- ◆ Provided technical reviews of research and development proposals to the UH Sea Grant College Program, U.S. Department of Commerce, U.S. Department of Agriculture, and the Pacific Tropical Ornamental Fish Program (PTOFP). Provided reviews of Aquatic Species Importation permits for the Department's Plant Quarantine Branch.



PLANT INDUSTRY DIVISION



Lyle Wong, Ph.D.
Administrator

The Division of Plant Industry consists of three branches, the Pesticides Branch, Plant Quarantine Branch, and Plant Pest Control Branch. Together, the Branches work to protect Hawaii's agricultural industries by preventing the entry and establishment of detrimental insects, weeds and other pests and by assuring the safe and efficient use of pesticides in Hawaii.

PESTICIDES BRANCH

Robert A. Boesch, *Manager*

The Pesticide Program regulates the distribution and use of pesticides through a program of licensing pesticide products, testing the competency of restricted-use pesticide applicators, and educating and monitoring pesticides distributors and applicators. This is to ensure the efficient, effective and safe use of pesticides to minimize adverse effects on the environment.

Data on branch activities may be found on page 62.

Highlighted activities for the program in FY 2007 include the following:

Pesticide Rule Revisions Completed

Revisions to the pesticides rules, which have been being developed for about 20 years were finally completed. These revisions provide the following:

- ◆ Additional ground water protections including classifying some pesticides as restricted-use pesticides based on their detection in ground water sources and authority to issue annual permits, when tracking the use of a pesticide is important to monitor surface and ground water resources;
- ◆ Additional protections for monitoring extremely hazardous substances. Both chlorine gas and chloropicrin (when used as a warning agent for structural fumigations) are classified for restricted use.

- ◆ More expertise is required for applicators who apply pesticides through irrigation systems and for those using agricultural fumigants.
- ◆ Fees were increased for product licenses, pesticide applicator certificates and pesticide dealer licenses.

There were a number of other changes. The revised rules are posted on the department's website.

Changes to the Pesticides Law

Two changes were made to the pesticides law (Chapter 149A, Hawaii Revised Statutes).

- ◆ One change related to structural pest control operators required to be licensed by the Pest Control Board. This change made it illegal for individuals to apply restricted-use pesticides for structural pest control without being licensed as a pest control operator, and also prohibits dealers from selling restricted-use product for structural pest control to persons that are not licensed pest control operators.
- ◆ The second change is to require pesticide retailers to post information on the poison hotline number and pesticide handling, storage, and disposal.

Liquid Termiticides Under Review

Urban streams on Oahu have highest levels of chlordane in the nation. In addition to appearing in urban streams, residue of chlordane and dieldrin have also been detected in drinking water supply wells. These legacy chemicals have not been used since 1988. They have been replaced by other liquid termiticides and baits. Baits use significantly less chemical and exploit the ground termites aggressive foraging behavior. Liquid termiticides must be applied at rates considerably higher than agricultural rates and must repel the foraging termites to be effective.

Many pest control operators are switching from baits to liquids. This change in practice has resulted in the department initiating a data call in for studies concerning the environmental fate of chemicals used in liquid termite treatments.

The department has executed a contract with the University of Hawaii, Water Resources Research Center to conduct a review of the data and determine if regulatory measures are needed to protect Hawaii's ground water and surface water resources.

Wildlife Protection Agencies Seek Aerial Application of Rodenticide to Control Predators

Predators (rats and mongooses) are one of the primary threats to endangered birds and snails. To counter these threats, land managers are developing control methods, including rodenticides for application in conservation areas. One method is the aerial application of rodenticide pellets to forests where predators are a problem. The



The Pesticides Branch helps to ensure that regulated pesticides are used properly, whether it be for agricultural, residential or commercial purposes.

pesticide program received an application for registering diphacinone pellets applied by aircraft. The application was for a special local need registration pursuant to Section 24(c) of the Federal Insecticide, Fungicide and Rodenticide Act. A considerable amount of data was supplied in support of this application.

Unwanted Pesticide Program

The Advisory Committee on Pesticides and the pesticides program have been working on an unwanted pesticide program to provide safe and affordable pesticide disposal to agriculture and small business. Specifications for bidding are prepared and it is expected that a contract will be awarded during the winter of 2008.

Pesticide Use Near Schools Causes Concern

Schools on three islands have filed complaints concerning the use of pesticides.

- ◆ A herbicide (DuPont Assure II Herbicide®) applied to a pineapple field in Haiku caused the school to call emergency responders and the evacuation of several classrooms.
- ◆ An insecticide (Orthene ®) applied to turf resulted in the closure of Kahuku High and Intermediate School for three days in May.
- ◆ Teachers at Waimea Canyon Elementary School have filed complaints concerning the application of pesticides to seed corn fields on an adjacent property.

Pesticide drift was identified in two of the complaints (Haiku and Kahuku). The department has been working with the agricultural operators in the cases to take measures so that school activities are not interrupted by pesticide applications. Among the measures that have been taken are to change formulations of pesticides used (from spray to granules), establish buffer zones around schools and not spray within those zones during school hours; to stop applications when wind speeds are excessive and other measures.

Because first responders including the police and fire department are often the first to respond to a school's reports of pesticide odors, the department worked with the Center for Occupational and Environmental Health, University of California Berkeley to sponsor a class. Four classes were offered in June. More than 120 individuals including police, fire, hazardous materials specialists and certified applicators attended these classes.

PLANT PEST CONTROL BRANCH

Neil Reimer, Ph.D., Manager

The primary function of the Plant Pest Control Branch is to reduce population densities of plant pests that cause significant damage to agriculture and the environment to manageable levels. This is achieved through statewide programs to eradicate or control plant pests, which include destructive insects, mites, snails and slugs, noxious weeds, plant diseases, and any other organisms harmful to plants, by utilizing chemical, mechanical, biological, and integrated control measures. The branch consists of the Biological Control Section and the Chemical/Mechanical Control Section.

Some of the accomplishments of the branch during Fiscal Year 2007 (FY07) included the following:

New Pest Detection and Identification

The HDOA Insect Taxonomist identified 576 samples of insects and other organisms from which 120 specimens were processed and added to the Branch's Zoological Reference Collection. The collection now contains approximately 166,300 specimens. In addition, 74 samples of insect specimens intercepted by the Plant Quarantine Branch were identified and 243 calls regarding various pests were received from the general public and processed.

HDOA's Plant Pathologist diagnosed 408 plant disease samples intercepted by Plant Quarantine inspectors and reported the detection of two new plants diseases.

- ◆ **A rust disease on bamboo** caused by *Dasturella divina* (Syd.) Mundk. & Khes. USDA APHIS PPQ officials informed the department that a California Department of Food and Agriculture plant pathologist identified a rust disease caused by *Dasturella divina* on bamboo in a shipment that originated on the island of Hawaii. Subsequent surveys in East Hawaii revealed that this



rust was well established. Within a few months, it was detected on all islands. This rust causes small, elongated, yellow spots on the leaves with the light brown rust pustule in the center of each spot. The spots can be so numerous that the leaf tissues become necrotic and the leaf dies. This disease most likely originated in Asia and is a pathogen of bamboo only. Due to the nature of rust diseases and the widespread plantings of bamboo, it would be impossible to eradicate or even control this disease. The only bamboo rust previously known to occur in Hawaii is *Puccinia phyllostachydis*.

- ◆ **A rust disease on purple vetch** caused by *Uromyces fabae* (Grev.) Fuckel. A rust fungal pathogen on purple vetch, *Vicia benghalensis* L., was observed on Maui and diagnosed as *Uromyces fabae*, which was not previously known in Hawaii. Its host range includes various peas, vetch, and broad bean. The already endangered, endemic Hawaiian vetch, *Vicia menziesii* Sprengel, may be further at risk due to the presence this disease.

The HDOA Survey Entomologist reported the detection of seven new immigrant insects in Hawaii during FY07, all of which are plant pests.

- ◆ **A taro whitefly**, *Aleuroglandulus* sp. prob. *subtilis* Bondar (Hemiptera: Aleyrodidae). Specimens of this whitefly were collected from caladium plants at Waiakea Uka on the Island of Hawaii in October 2006. A distinct feature on the nymphs of this whitefly are two pairs of thick, fragile, glassy, wax rods that exude from pores in the dorsal surface of the thorax and abdomen, and curve downward. This whitefly is known from Brazil and Panama. Host plants include several species of palms (Arecaceae), such as *Chamaedorea wendlandiana* and *Synechanthus warsceviczianus*, and *Chomelia oligantha* (Rubiaceae).
- ◆ **Ants**, *Solenopsis globularia* (Smith) and *Monomorium indicum* Forel. (Hymenoptera: Formicidae). Routine ant surveys during the year using Spam bait traps revealed the presence of two new species of ants. Specimens of *Solenopsis globularia* (Smith) were collected from Sand Island on Oahu in July 2005. Little is known about this ant. Specimens of the other new species, *Monomorium indicum* Forel, were collected at Kawaihae in July 2005. This ant is known in India and the United Arab Emirates.
- ◆ **A whitefly**, *Paraleyrodes minei* laccarino (Hemiptera: Aleyrodidae). Specimens of this whitefly were collected on Maui from coconut palms at a botanical garden in Kahului in August 2006. According to a USDA Systematic Entomology Laboratory insect identifier, this whitefly was not previously known from coconut or any other palms, which indicates that this is a new host record. Examination of specimens of another new closely-related species of whitefly, *Paraleyrodes bondari* Peracchi, which were collected on Oahu in 2003 and recorded as a new State record, revealed a mixture of both *P. minei* and *P. bondari*.
- ◆ **A thrips**, *Thrips parvispinus* (Karny) (Thysanoptera: Thripidae). Specimens of this thrips were collected from papaya blossoms at Pahoa on the island of Hawaii in May 2006. It was later collected from papaya blossoms on Oahu in September 2006. This thrips is known from Southeast Asia, Australia, and Greece, and is a polyphagous feeder. In Hawaii, this thrips appears to be causing some damage to papaya flowers, resulting in the scarring of young fruit. It may also be causing foliar damage to the terminal shoots of papaya.
- ◆ **A Bo tree pollinator wasp**, *Platyscapa quadraticeps* (Mayr) (Hymenoptera: Agaonidae). Adult specimens of this tiny black wasp were reared from fruits of the Bo tree (also known as the Bodhi tree, peepul tree, or sacred tree), *Ficus religiosa* L., in November 2006. This wasp is a pollinator of the Bo tree. Previously, there were no pollinators of this tree in Hawaii, so there now are concerns that this tree has the potential to become invasive.
- ◆ **Varroa mite**, *Varroa destructor* Anderson and Trueman (Acari: Varroidae). In April 2007, an Oahu beekeeper with a base yard in Manoa reported that he had observed tiny, red mites in three honey bee hives that he had obtained from the Hawaii Nature Center site several miles away in Makiki. The colonies were no longer being managed and were considered to be abandoned. After a report was received from the beekeeper via the HDOA Pest Hotline, specimens were collected by HDOA entomologists and identified as the varroa mite, *Varroa destructor* Anderson and Trueman. Prior to this discovery, Hawaii was one of the few places in the world that was still free of this very destructive honey bee pest. The varroa mite is considered to be the most serious pest of honey bees in the world. It has been spreading rapidly throughout most of the beekeeping countries in the world. In varroa mite-infested honey bee colonies, newly emerging bees are malformed. Severe infestations of the mite will result in an eventual decline of bee colonies and a reduced honey bee population. Commercial beekeeping in Hawaii, which includes queen bee and honey production, has been estimated at more than \$4 million. However, the greatest value of honey bees is their ability to pollinate fruit trees, vegetables, and seed crops. With the presence of the varroa mite in Hawaii, a great decline in the honey bee population is anticipated. This will significantly reduce pollination of many commercial and residential fruit trees and vegetable crops, especially cucurbits, which are highly dependent on honey bees for pollination.



Above: A female varroa mite. The mite has only been detected on Oahu, but HDOA staff continue to conduct surveys statewide to detect the possible movement of the mite as soon as possible.

Left: Kona Plant Quarantine Supervisor Clare Okamura conducts a survey of bees in Kona with the assistance of a beekeeper.

Projects of the Branch's Biological Control Section included the following during FY07:

- ◆ **Nettle caterpillar** [*Darna pallivitta* Moore]. Since its discovery on the Island of Hawaii at a Panaewa ornamental plant nursery just southwest of Hilo in September 2001, *D. pallivitta* has steadily dispersed to neighboring areas in East Hawaii and has increasingly become a human health problem due to the stinging caterpillars. The nettle caterpillar (NC), at the end of FY06, was well established in the area from Papaikou, just north of Hilo, in the South Hilo District, southwest to Mountain View in the Puna District and south to the subdivisions in lower Puna.

The first confirmed record of detection of the nettle caterpillar in West Hawaii was made in July 2006 at a Kona retail store, where a single larva was found on a potted gardenia plant. During September and October 2006, isolated discoveries were also made at Keahole and Hualalai, respectively. In February 2007, NC infestations were detected in Kohala at a plant nursery and a nearby school.

On Oahu, a significant NC infestation was discovered in June 2007 at a landscaping nursery in central Oahu at Kipapa Gulch. The UH CTAHR PEPS Insect Diagnostician received a report of nursery workers being stung while handling potted areca palm plants. The reported infestation at this nursery was confirmed by HDOA personnel on June 4, 2007. Previously, the NC was only known to be present on the Big Island, although periodic interceptions had been made on Maui. The most likely source of the Oahu infestation was a shipment of palm plants about a year earlier from a nursery at Panaewa on the Big Island.

An eradication attempt by the nursery owner using several insecticides appeared to be successful in killing the NC larvae. However, the pupal stages in

the shell-like cocoons survived the treatments. In order to reduce the next generation of emerging moths and their progeny, a labor-intensive effort of hand-collection of more than 17,700 cocoons during a four-day period was conducted by personnel of the HDOA Plant Pest Control Branch, DLNR (Department of Land and Natural Resources), and OISC (Oahu Invasive Species Committee). Nursery personnel are continuing to apply insecticides to kill caterpillars and moths. Black light bug-zappers have been placed in the nursery to attract and kill the moths.

A second nursery belonging to the same owner that is located about a mile away in Mililani was later found to be infested with the NC, even though earlier inspections had not detected any. Pheromone traps that attract male NC moths confirmed presence of the pest on June 7. HDOA personnel are continuing surveys and making recommendations to the nursery owner for containment of this pest.

Exploration for natural enemies in Taiwan during October 2004 resulted in the collection of a parasitic wasp *Aroplectrus dimerus* Lin (Eulophidae) that was found attacking nettle caterpillar larvae. Testing of this ectoparasitoid in the HDOA Insect Quarantine Facility on Oahu has shown this potential biological control agent to be host-specific. The administrative process to obtain approval for its release from quarantine is underway. The colony of *A. dimerus* is being maintained in the IQF despite occasional rearing difficulties. A cytoplasmic polyhedrosis virus (CPV) has plagued the nettle caterpillar quarantine colonies for several years and has prevented continuous rearing in Honolulu. Parasitoid propagation is dependent on shipments of larvae from the Hilo Insectary. The CPV disease is also a continuing problem in the Hilo Insectary, but it has been managed through good sanitation practices and meticulous care in sterilizing equipment.



- ◆ **Pickleworm** [*Diaphania nitidalis* Cramer]. Funds for the USDA (CAPS) Pickleworm Survey Project were received in August 2006. A statewide survey of the pickleworm was undertaken from September 2006 through June 2007 to determine the extent of the distribution of the pest, using insect traps and monitoring crop infestation levels. Insect traps (Smart traps) baited with a floral extract lure were set up on each of the four major Hawaiian Islands and staff counted the number of moths trapped. The cucurbit hosts at each site were routinely examined for pickleworm damage and natural enemies. On Oahu, collections of infested plants were brought back to the laboratory. Insects were reared and observed for parasitoid emergence and parasitoids were examined.

The Smart trap was not effective in capturing pickleworm moths. Pickleworm damages on cucurbit crops on Kauai ranged from 0 to 42 percent, but no moths were caught. Damages on Maui ranged from 0 to 10 percent, but no moths were caught there also. A total of two moths were caught on the Big Island at the Naalehu site during the month of January 2007 and damages of up to 11 percent were found at other sites. The highest number of moths (total of 56) was caught on Oahu at the Ewa and Kunia sites during the month of January 2007. Other sites had pickleworm damage, but no moths were caught. Although the Smart trap was not an effective monitoring tool for the moth, crop infestation data showed that the pest is well established throughout the four major Hawaiian Islands. Farmers, however, are able to control the damaging effects of the pickleworm with the use of insecticides. No natural enemies were observed in the field and none were reared from collected specimens.

- ◆ **Glassywinged sharpshooter** [*Homalodisca coagulata* (Say)]. The rapid, unprecedented suppression of the glassywinged sharpshooter (GWSS) in Hawaii has been an outstanding example of fortuitous biological control by an immigrant natural enemy. The GWSS parasitoid, *Gonatocerus ashmeadi* Girault (Hymenoptera: Mymaridae), which is believed to have arrived on the island of Oahu in association with the GWSS within parasitized eggs on infested host plants, completely suppressed the GWSS population that was just beginning to multiply and threatening to explode. The timely and effective intervention by *G. ashmeadi* in Hawaii saved the State of Hawaii from having to commit a substantial amount of funding, time, and manpower resources to deal with the problem.

The GWSS was first discovered in May 2004 on Oahu. The GWSS is a major economic pest in California due to its ability to acquire and transmit the bacterial pathogen *Xylella fastidiosa*, that causes Pierce's

disease of grapes, citrus variegated chlorosis and scorch diseases in almond, oak, and ornamental plants. During subsequent surveys, *G. ashmeadi* was found parasitizing GWSS eggs, as well as another predator, the Mexican ant, *Pseudomyrmex gracilis mexicanus* (Hymenoptera: Formicidae). The fortuitous introduction and establishment of *G. ashmeadi* resulted in the rapid suppression of the GWSS population density to the extent that this pest is now extremely difficult to detect.

- ◆ **Papaya mealybug** [*Paracoccus marginatus* Williams and Granara de Willink]. The increasing frequency of calls received from residents in 2006 and early 2007 with regard to papaya mealybug (PM) infestations on Oahu and the neighbor islands indicated that the mealybug is becoming more and more widespread throughout the state. PM infestations have been observed to be most severe on papaya, plumeria, hibiscus, and jatropha. A complex of natural enemies was found in association with the PM on four of the most preferred host plants in Hawaii.

The first detection of the PM on the Island of Hawaii was confirmed in September 2006 in Waikoloa in West Hawaii. In March 2007, a PM infestation was discovered in East Hawaii at a papaya farm at Pohoiki by a UH county extension specialist. Surveys of all of the major papaya growing areas in Puna and routine surveys in the Hilo area did not result in the detection of any other PM infestations. Thus, the infested field at Pohoiki is still the only known PM infestation in East Hawaii, where most of the major papaya growers are located. A meeting of the Big Island papaya growers was organized by the CES and held in early April 2007 to inform the growers of the PM situation in Puna. The first release of 200 adults of the PM parasitoid *A. loecki* was made at the Pohoiki papaya orchard in mid-May, followed by several more releases.

- ◆ **Macadamia felted coccid** [*Eriococcus ironsidei* Williams]. PPC Branch personnel from Hilo and Kona visited macadamia nut groves in Honomalino in early March 2007 to inspect macadamia nut trees for this pest. Two groves under separate ownership were surveyed that are several hundred yards from the an orchard nursery known to be infested. No sign of the macadamia felted coccid was found. Subsequently, PPC Hilo personnel met with the infested farm's manager to discuss a management program for their nursery. All infested trees in close proximity to the nursery were cut down so that the nursery would be more isolated from the orchard.

Other scale suppression methods, such as the application of horticultural oil spray and the culling of infested seedlings, are being used by nursery workers to minimize the chance of infested plants being sold.



The macadamia felted coccid (MFC) was first discovered in February 2005 in a macadamia nut orchard at Honomalino in the South Kona District. Initial fears that this pest would spread rapidly and cause crop losses have not been realized. The grower has gained good control over the infestation using horticultural oil. The MFC has not been much of a problem in other parts of the orchard. Some natural enemies of the MFC in its native origin in Australia, including a parasitic wasp and a predacious ladybird beetle, have already been found to be present in the infested orchards at Honomalino and are obviously contributing to the suppression of this pest, which is believed to have been on the island several years before its initial detection.

- ◆ **Erythrina gall wasp** [*Quadrastichus erythrinae* Kim]. The erythrina gall wasp (EGW) has become one of the most devastating invasive pests in the history of the Hawaiian Islands since its first discovery on the Island of Oahu in mid-April 2005. It spread rapidly throughout the state within six months and its damaging effects have been unstoppable. The constant leaf drop and the repeated galling and stunting of new leaf and shoot growth have completely defoliated susceptible erythrina trees and resulted in the loss of photosynthesis. The lack of food production has led to the eventual death of the trees.

The EGW has already destroyed most of the plantings of the introduced, ornamental Indian coral tree, *Erythrina variegata* var. *orientalis* (L.) Merr., in Hawaii. This tree was commonly used in landscaping along highways and around public buildings, and most noticeably, at city parks. Approximately one thousand trees of this species had to be removed from parks on the Island of Oahu because of safety concerns after they had died. Tall erythrina, which is identified as the cultivar *E. variegata* (L.) 'Tropic Coral' has been used as windbreaks and for soil conservation in agricultural areas and for shade and privacy barriers around residential and commercial buildings. The equally susceptible native wiliwili, *E. sandwicensis* Degener, an endemic Hawaiian species that is the dominant tree in dry forests on the leeward slopes of all of the main islands, is seriously threatened by the EGW and its future is uncertain. The introduced ornamental *E. crista-galli* L., a Brazilian species that appears to have some tolerance to the EGW.

The Erythrina Gall Wasp Biocontrol Project was initiated in August 2005. The branch's Exploratory Entomologist conducted his first exploration for EGW natural enemies in East Africa in December 2005 to late February 2006. Several biocontrol candidates were sent to the HDOA Insect Quarantine Facility in Honolulu for propagation, colonization, and studies. Two species of parasitic wasps, a eulophid

(undetermined species) and a eurytomid (*Eurytoma* sp.), both collected in Arusha, Tanzania during January 2006, were determined to be the most promising candidates for biological control of the EGW. The eulophid colony died out after five generations due to a preponderance of males. *Eurytoma* sp., however, has reproduced well in the lab without any problems. According to field observations made in Tanzania by the HDOA Exploratory Entomologist, *Eurytoma* sp. was the most dominant parasitoid found. Host specificity and biology studies for *Eurytoma* sp. were initiated in March 2006 and completed in December 2006. Efforts are underway to document research to support the release of this biocontrol agent from quarantine.

Risk assessment of *Eurytoma* sp., collected in Arusha, Tanzania, was completed in October 2006 and used a variety of non-target host plants. Tests results indicated that *Eurytoma* sp. is highly specific to the EGW.

- ◆ **Asian citrus psyllid** [*Diaphorina citri* Kuwayama]. Hilo PPC Branch members completed the initial survey of the Island of Hawaii for the Asian citrus psyllid (ACP) in July 2006. No ACP detections were made in the two Kona Districts in West Hawaii on all mock orange plants (*Murraya paniculata*) examined. However, the first sighting of ACP was found in July during an inspection of potted mock orange plants in a garden shop in Kailua. The presence of ACP has been noted from Papaikou (South Hilo District), south to Kalapana (lower Puna District), and west to Volcano (upper Puna District) in East Hawaii. In February 2007, an infestation was discovered at a Kohala school.

In January 2007, ACP was found for the first time on Maui on various varieties of potted citrus trees at a garden shop in Kahului. Previously, a light infestation that was detected on potted citrus at Kula garden shop in late 2006 was successfully eliminated before it could disperse. The later infestation was more significant, with large numbers of adults, nymphs, and eggs being observed on about 20 large citrus plants and some smaller plants. Cursory surveys of citrus and mock orange plants conducted in Kahului in the vicinity did not detect any ACP infestations. However, more intensive surveys conducted later in the month indicated that ACP infestations were fairly widespread on Maui. During the survey, it was learned that several plant nurseries had received citrus plants from a prominent Big Island distributor.

In June 2007, branch personnel, while visiting Lanai to assess infestations of the papaya ringspot virus, also collected ACP adults on citrus at a farm near Lanai Airport.

Also in June 2007, specimens of ACP were found for the first time on Oahu on a mock orange hedge in



PPC Entomologist Ron Heu demonstrates for KITV News how staff use Spam baits to survey for Little Fire Ants and Red Imported Fire Ants at ports of entry, such as Honolulu International Airport.

Honolulu. This detection represents a new island record for this pest.

The ACP was initially found in Hawaii accidentally in May 2006 when a Waiakea resident submitted a branch from a navel orange tree that was infested with aphids to the HDOA Hilo Office. Because ACP is the primary vector of citrus greening disease (CGD), the branch immediately shipped a sample to the National Plant Germplasm and Biotechnology Laboratory in Beltsville, Maryland. The results were negative for CGD, and the disease has not been found in Hawaii to date.

- ◆ **Ivy Gourd** [*Coccinia grandis* (L.) Voigt]. Ivy gourd infestations throughout Oahu are now at the lowest levels since the early 1990's when populations of this highly invasive cucurbit vine began to explode and disperse. Recent drought-like conditions have had a major impact on ivy gourd densities in Windward Oahu, where the microclimate had been highly favorable for continued proliferation and the weed had continued to persist at relatively high densities. Ivy gourd infestations in these areas have diminished to low levels after the establishment of the biocontrol agents, such as the ivy gourd vine borer, *Melittia oedipus* Oberthur, and the ivy gourd leafmining weevil, *Acythopeus cocciniae* O'Brien. Their activities have had significant impacts in suppressing ivy gourd population densities in drier areas, especially in Leeward Oahu. Other invasive vining weeds, such as maile pilau (skunk vine) and wood rose are now making a come-back, as well as some newer invasive weeds, like the Madeira vine and *Neonotonia wightii*, are now displacing ivy gourd.

A request to the USDA -APHIS for an extension of the CAPS-funded project for the biological control of fireweed was approved for another year. The original work plan was hampered by the loss of the quarantine colony in early 2006, which pushed back the much anticipated approval for release of *S. extensa* from quarantine. The project, now extended until June 2008, has been modified to study the phenology (life history pattern) of the target weed and environmental cues at selected sites on Hawaii and Maui in preparation for the release of the biocontrol agent. The project also includes a ground survey of pest organisms that may be fortuitously infesting the fireweed, development of an artificial larval diet formulation, and mass production of the moth, should it be released during the newly approved period of the project.

- ◆ **Miconia** [*Miconia calvescens* DC]. Colonies of the gall-forming nematode *Ditylenchus gallaeformis*, a potential biocontrol agent, were finally established on miconia plants in the quarantine greenhouse of the Plant Pathogen Containment Facility. Three previous shipments of galls sent via postal service from Brazil were not viable upon their arrival in Honolulu, possibly due to low temperatures in the cargo section of the aircraft. The fourth and final shipment of galls was hand-carried directly from Costa Rica by a USDA Forest Service entomologist. Live nematodes from these fresh galls were successfully inoculated onto miconia plants. This nematode causes gall formation at apices and along leaf veins. It can also cause death of young miconia plants. Host range tests will begin after the numbers of nematode have increased. This nematode thrives under wet conditions and requires a film of water for movement.

Another potential biocontrol agent, the fungal pathogen *Coccidiella miconiae*, was also established in the quarantine greenhouse on miconia. This obligate parasite, which was also hand-carried from Costa Rica along with the nematode, causes pimpling of miconia leaves. The pimpling can be so numerous that the foliar photosynthetic process is significantly reduced. This fungus is effective in drier climates and may be a good biocontrol agent in areas where other control agents would not be effective.

- ◆ **Fireweed** [*Senecio madagascariensis* Poiret]. Rearing and colony maintenance of the arctiid moths *Nyctemera apicalis* from South Africa and *Secusio extensa* from Madagascar continued. Occasionally, routine propagation of both species was disrupted by a shortage of clean, healthy, potted fireweed host plants. Several leaf feeding insects, including aphids, thrips, and the most damaging serpentine leaf miner (*Liriomyza* sp.), periodically invaded the outdoor plant storage cages in which the host plants were kept.



Nevertheless, the risk assessment evaluation of *N. apicalis* is currently ongoing using selected test plants in the family Asteraceae. The quarantine colony of *S. extensa*, which had died out as a result of inadequate host plants, was reestablished with recent collections in East Africa. Efforts are continuing to produce appropriate documents to justify and request approval from Federal and State regulatory agencies for the release of *S. extensa* into the environment of Hawaii to suppress fireweed infestations. Efforts to reestablish a quarantine colony of *Sphenella austrina* Munro, a flower head feeding tephritid fly, with recent collections made in South Africa were not successful because of the very limited number of adults that emerged from the collected material.

- ◆ **Banana Poka** [*Passiflora tarminiana* Coppens & Barney, sp.nov. (formerly *P. mollissima*)]. Due to the success of previous releases in 2006 of the banana poka biocontrol fungus *Septoria passiflorae* near Poli Poli State Park on Maui, the Leeward Maui Watershed Partnership provided funding for an extended collaboration between Maui DLNR DOFAW and the HDOA Biocontrol Section Plant Pathology Unit. The Plant Pathology Unit provided 200 plates of *S. passiflorae* cultures for each of four releases that were made by DOFAW personnel along the slopes of Haleakala from March to June 2007. By the third release in May, DOFAW personnel reported that banana poka that had been sprayed earlier were already turning yellow. This fungus causes leaf spots, followed by leaf yellowing, and finally defoliation. Spores of this fungus are transported via wind-driven rains which, along the flanks of Haleakala, consistently flow upslope and not sideways. The goal of this project is to establish the biocontrol fungus along the low-level banana poka infestations in the Kula State Forest so that the disease could spread upslope with the winds.
- ◆ **Christmas berry** (Brazilian peppertree) [*Schinus terebinthifolius* Raddi]. Dried Christmas berry leaves with *Septoria* leaf spots were mailed from Brazil to the HDOA Plant Pathogen Containment Facility in Honolulu, where the fungal pathogen *Septoria schinii* was isolated and cultured. The endemic *Rhus sandwicensis*, which is in the same taxonomic family Anacardiaceae as Christmas berry, was the first test plant inoculated. Leaf spots developed on *R. sandwicensis* four weeks after inoculation and *S. schinii* was observed sporulating in the spots, thus proving pathogenicity. Because *S. schinii* infected *R. sandwicensis*, this fungus has been eliminated from consideration as a biocontrol agent for Christmas berry in Hawaii.



PPC's Sam Benzon searches palm plants for nettle caterpillar pupae at a Central Oahu nursery.

Projects of the Branch's Chemical/Mechanical Control Section included the following during the FY 2007:

- ◆ **Little Fire Ant** [*Wasmannia auropunctata* (Roger)]. Personnel of the Chemical/Mechanical (C/M) Control Section began surveying nurseries on Oahu for the presence of little fire ant (LFA). CM staff continued to monitor and treat infestations of the LFA on the Islands of Kauai and Hawaii. On the Island of Hawaii, CM staff continued to assist nurseries in detecting LFA and training nursery personnel to detect and treat infested property. Chemical trials continued to be conducted jointly with UH-CTAHR-PEPS researchers to find effective insecticides for use at various LFA infestation sites, including plant nurseries, residences, golf courses, pastures, and fruit and nut orchards.
- ◆ **Coqui Frog** [*Eleutherodactylus coqui* Thomas]. Coqui frog control efforts and sprayer loan programs have continued on the islands of Hawaii, Maui, Oahu, and Kauai. Community groups, plant nurseries, and private individuals are allowed to borrow spray equipment from the HDOA at no charge. On Kauai, CM staff worked with members of KISC to prepare the one 25-acre coqui-infested site for chemical treatment. Ground and trail clearing continued in order to create less habitable environments for the coqui in designated areas and to lessen the vegetation to allow better chemical penetration of infested areas.

On Oahu, HDOA personnel assisted the Oahu Invasive Species Committee (OISC) and the U.S. Army, with night surveys at the one wild population on the island. The 15-acre site has been quiet during this past year due to the detection efforts of the multiple



agencies and OISC's strategic spraying. Selected Oahu commercial nurseries were monitored, treated and nursery staff trained for coqui frog control by HDOA, OISC, and Land and Natural Resources - Division of Forestry and Wildlife (DLNR - DOFAW). Frog populations at the nursery sites have declined significantly due to the collaborative efforts. The Oahu staff operated new equipment that uses steam to sanitize benches, containers and inanimate objects to disinfect them of coqui frogs. Experiments were done using this steamer to deliver a shower of hot water onto plants on benches. Staff from the University of Hawaii, Agricultural Engineering Department assisted with the experiment. On the Big Island CM personnel initiated experiments with physical barriers, and the search for better materials and barrier configurations for nursery use will continue.

- ◆ **Banana Bunchy Top Virus (BBTV).** Containment and management practices for the banana bunchy top virus (BBTV) continued on the islands of Hawaii, Kauai, and Maui, with limited chemical control work on commercial farms by HDOA personnel. Maui personnel traveled to Lanai to survey the island for BBTV. No BBTV was detected. On Oahu, HDOA personnel continue to assist commercial farmers in detecting and providing counseling on management of the disease.
- ◆ **Papaya Ringspot Virus (PRV).** Section personnel on Kauai continue surveying for PRV since it is not known to occur on that island. PPC personnel visited Lanai when PRV was discovered there by a UH-CES agent. The personnel conducted outreach with homeowners and one commercial papaya grower about managing the disease as it was found to be wide-spread on the island. CM personnel conducted periodic monitoring of the properties with infected plants and continued to provide information to the public about PRV.
- ◆ **Pickleworm Monitoring Project**
CM personnel on Hawaii, Maui, and Kauai assisted the Biological Control Section Insectary Entomologist in surveying under the CAPS program for the pickleworm, *Diaphania nitidalis* Cramer. The pickleworm traps with lures were set out in fields of cucurbitaceous plants and monitored for the presence of pickleworms in the flowers and fruits.
- ◆ **Public Awareness Activities.** Section personnel participated in educational outreaches for public awareness at activities such as the Hawaii County Fair, Maui County Fair, and Kauai County Fair. Personnel also made visits to public schools to support agricultural awareness. Topics of presentations included noxious weeds, little fire ant, nettle caterpillar, and coqui frogs.

- ◆ **Seed Inspection.** Routine surveys of agricultural and vegetable seed vendors to ensure the quality and proper labeling of seeds sold to consumers were conducted. Examination of seed lots entering the United States from foreign ports was performed in the C/M Control Section Seed Laboratory under an agreement with the U.S. Department of Agriculture, Animal and Plant Health Inspection Service. Seed lots containing prohibited noxious weed seeds or seeds of quarantine status were refused entry into U.S. commerce. Germination tests were performed on vegetable and agricultural seed lots to ensure that minimum germination standards under the Hawaii Seed Rules were met. Tests upon requests were performed in the seed laboratory for Hawaii seed distributors to ensure compliance with the Hawaii Seed Rules.

PLANT QUARANTINE BRANCH

Carol Okada, Manager

The Plant Quarantine Branch (PQ) program administers Hawaii's plant and non-domestic animal quarantine and microorganism import law that are three-fold in nature:

- (1) preventing the introduction of invasive plants, harmful insects, animal and plant diseases, illegal animals and other pests into the state;
- (2) preventing the spread of established pests species from one island to another, or from an infested area to other areas on the same island; and
- (3) facilitating the export of allowable agricultural materials to other states, territories and foreign countries. These functions are accomplished through:
 - Permits for the importation of regulated microorganisms, plants and animals, including site inspections, pre-entry requirements and permit conditions;
 - Airport and maritime port-of-entry inspection and clearance of imported agricultural products, including, propagated plants, cut flowers, and fresh fruits and vegetables for pests of quarantine concern to Hawaii;
 - Investigations for possible violation of state plant quarantine laws and regulations;
 - Inspection, certification and clearances of propagative plants materials for movement between islands; and
 - Certification of nurseries for the export of propagative plants materials to U.S. mainland and foreign markets.



PQ Branch Highlights:

Staff position descriptions were updated in FY07 to enable the filling of new staff positions approved by the FY06 Legislature (Act 160, Hawaii Session Law).

Of the 56 new staff positions approved by the 2006 State Legislature (31 inspector, 25 pest control technician), 34 were filled during the fiscal year. Hilo and Oahu received the largest number of new staff positions to improve coverage of high-risk agricultural commodities arriving through the two ports, propagative plant materials to nurseries in East Hawaii and fresh fruits and vegetables and cut flower entering into the Oahu market.

Construction proceeded at Kahului Airport on the first dedicated plant quarantine inspection facility to be built in Hawaii. The "joint use" inspection facility will house state and federal plant quarantine programs for the inspection of incoming domestic (state) and foreign (federal) cargo arriving at the airport. The facility, with three dedicated inspection bays with containment and laboratory space was funded by the State Department of Transportation through an airport improvement grant from the U.S. Federal Aviation Administration. The facility is expected to be completed and operational by end of 2007.

Planning has been initiated for a proposed joint use inspection facility for Honolulu International Airport. HIA receives more than 90 percent of the passenger and fresh agricultural products entering Hawaii daily. Plant quarantine inspections, domestic (state) and foreign (federal) are conducted at cargo receiving warehouses of the individual carriers under existing lighting conditions and no containment for cargo found to be infested with pests. The proposed facility at HIA will have bays for the inspection of cargo with adequate lighting, tables and containment (refrigeration and freezers) to prevent the release of pests in infested cargo. Planning for the

proposed facility is being funded by State Civil Defense through a federal grant from Homeland Security.

Plant Quarantine has a data management system tailored to track inspection and pest interception data at Kahului Airport. The system was developed as part of a Federal Record of Decision concluding the Environmental Impact Statement for Kahului Airport. The system was upgraded in FY07 to handle data management for State Plant Quarantine programs statewide for inspection, permitting, and pest reports.

Plant Quarantine staff training programs have traditionally been handled by senior port inspectors for new recruits with no formalized training thereafter for trained inspectors. To standardize training and assure that inspectors receive on-going training and updating on regulatory changes, pest detection and program priorities, a new educational specialist's position was established and filled in State Plant Quarantine in FY07. The new educational specialist will be responsible for training staff statewide and will work with federal quarantine officials to setup programs to enhance information exchange and cooperation across jurisdictional (state and federal) lines.

The ability to respond effectively to snake sightings in a timely fashion is a critical component of the branch's Biosecurity Program. To this end, selected branch personnel have received training from U.S. Geological Survey personnel in Guam with hands on training in locating, capturing and handling brown tree snakes (*Boiga irregularis*) in the wild. The three-week course provides participants with interview techniques, setting up the response that may include cutting transects and searching jungle environments, trapping for snakes, and doing roadside searches and inspections. Through FY07, 13 branch personnel statewide have received training and can provide response coverage in each county.

New Plant Quarantine Personnel Positions Established in FY07			
Position	Island	Number	Description
PQ Inspector V	Oahu	3	Specialists: Aquatic,Bio-Tech, Education
PQ Inspector IV	Oahu	1	Military MJ Inspector
PQ Inspector III	Oahu	14	PQ Inspector
PQ Inspector III	Oahu	3	PQ Inspector / Canine Handler
PQ Inspector III	Hawaii-Hilo	7	PQ Inspector
PQ Inspector III	Hawaii-Kona	2	PQ Inspector
Pest Control Tech III	Oahu	9	Pest Ctrl Aid/Tech
Pest Control Tech III	Hawaii-Hilo	5	Pest Ctrl Aid/Tech

*** A total of 56 staff positions Statewide were created in FY 07



Plant Quarantine inspectors conducting increased inspections during a risk assessment at Keahole Airport in Kona.

Risk assessments provide important data on incoming pests so inspectors can determine the types of cargo and pathways that are high risks for hitchhiking invasive pests.

Plant Quarantine Branch personnel conducted 19 talks on the state's pest prevention and biosecurity program and tours of the Plant Quarantine Station with a total of 1,178 individuals in attendance ranging from pre-school, elementary through high school, and university-level students, as well as civic and senior citizen groups. Other public outreach activities consisted of educational exhibits at the various county fairs that were held on the islands of Kauai, Maui, Hawaii and Oahu, which highlighted information on the problems invasive species posed to Hawaii. The exhibits attracted a constant flow of fairgoers who were able to view a live display of various animals that were either prohibited or restricted to zoos for exhibition only, including a ball python, leopard gecko, giant day gecko, Madagascar hissing cockroach and dwarf African hedgehog.

A total of 170 containers of cut Christmas trees and wreaths were shipped to Hawaii from Oregon and Washington. In accordance with Branch protocols, Oregon and Washington Departments of Agriculture witnessed the shaking and cleaning of 100 percent of the trees in 140 (82.4 percent) of the containers. The remaining 30 containers were only spot checked by the two mainland agriculture departments. No container vans required treatment or further inspections due to yellow jacket infestations; however, four containers were refused entry due to infestations with the pest *Cecidomyiidae: Contarinia sp.* The Oregon Department of Agriculture also provided valuable information that assisted in the identification of some of the pests that were intercepted in the tree shipments.

The following risk assessments, both ongoing and new, were conducted throughout the year to focus on the different pathways for invasive species to enter Hawaii:

- ◆ United Parcel Service (July 2 – 19, 2006) – Personnel including detector dog teams monitored incoming mail/packages at the United Parcel Service distribution center at the Honolulu International Airport to determine the pest risk introduction through this express mail pathway.
- ◆ Transitional Inspection Facility Risk Assessment (August 20, 2006 to September 1, 2006) – Air and maritime cargo was allowed to be moved to Armstrong Produce Ltd. for on-site inspection at their facility in Honolulu, Oahu. The purpose of this risk assessment was to determine the feasibility for personnel to effectively inspect large volumes of surface and air freight at the site of an importer instead of at the transportation carrier's location. It was determined that the use of the selected produce company as a transitional inspection facility would increase inspection effectiveness capabilities while maintaining proper food safety requirements.
- ◆ Maui Risk Assessment (September 24, 2006 to October 8, 2006) – Personnel continued on-going intensified inspection of incoming shipments by assigning personnel from other ports to augment staff at Kahului Airport during this period.
- ◆ Foreign Pathway Risk Assessment (February 12, 2007 to May 4, 2007) – Periodic inspections of incoming air cargo of foreign origin were monitored by personnel to analyze this pathway risk by collecting data in regards to the commodity origin (foreign) that arrived in Hawaii via domestic ports.



Mexican fishing bat recovered from Aloha Tower building, Honolulu, Oahu.

Other program activities:

- ◆ A raccoon was immobilized by crew members of a vessel which docked at Kahului Harbor. The vessel originated from San Diego, California. The animal was tested for rabies and was found to be negative for the disease.
 - ◆ A Maui resident captured a 17 - inch long veiled chameleon (*Chamaeleo calyptrotus*) in his back yard in Makawao. A breeding population of the veiled chameleon is established in a gulch in Makawao and efforts are underway to eradicate the population through day and night searches by state as well as community organizations.
 - ◆ Three king snakes (*Lampropeltis* sp) and a boa constrictor (*Boa constrictor*) were turned in by an individual to the Plant Quarantine (PQS) office in Hilo. Since the animals were turned in under the State's amnesty program, no action was taken.
 - ◆ A tiger shovelnose catfish (*Pseudoplatystoma fasciatum*) was reported by an individual to be in a pet shop on the Island of Oahu. The prohibited fish was being held in a plastic tub and was not for sale. The manager of the pet shop reported that the pet shop had accepted the fish from an unidentified customer as a prohibited animal under the State's amnesty program.
 - ◆ A hotel employee on Maui discovered a dead snake when unloading new furniture from a container that originated in the Philippines. The remains were identified by the Bishop Museum to be that of a reticulated python (*Python reticulatus*). From the condition of the snake, and the presence of maggots in the carcass, the snake was estimated to have been dead for approximately seven days.
 - ◆ A 21-inch boa (*Boa constrictor*) was turned in to the Maui Humane Society anonymously on Thanksgiving Day. The animal was contained in a shoe box with a message that said it was found in Kihei, Maui. No other information was obtained on the circumstances involving this incident.
 - ◆ A construction worker while working under Pier 2 in Hilo Harbor, Hawaii, killed a 23-inch grayish brown snake and notified port authorities. The snake was later identified by the Bishop Museum as an Asian water snake or chequered keelback snake (*Xenochiropis pictator*). A follow-up investigation into the circumstances involved with the discovery of the animal may have revealed that the animal may have come from one of three ships arriving from an Asian port.
 - ◆ A flight from Narita, Japan to Dallas Ft. Worth, Texas was diverted to Honolulu because the captain of the aircraft heard unusual noises in the ceiling panel above the cockpit and suspected that it may be a squirrel. He feared that the animal would chew into the wires of the aircraft and endanger the lives of all on board. Passengers were instructed to deplane from the aircraft and later sent to their destinations on other flights.
- Personnel from the USDA Wildlife Service, State Animal Quarantine Holding Facility, and Plant Quarantine stood by while passengers deplaned, and traps were set up in various areas of the cabin. The squirrel was finally caught in the First Class section of the aircraft and sent to the Animal Industry Veterinary Laboratory for identification and rabies testing. The animal was later identified as an Eastern Gray Squirrel and the results proved negative for rabies. The aircraft later was ferried to its final destination the following day.
- ◆ An air cargo agent received a call from their operations center stating that there was a loose animal on board their flight from San Francisco. Personnel met the flight and retrieved a hermit crab in the cabin.
 - ◆ A maintenance employee discovered a bat on the floor of a second-floor office at Aloha Tower Marketplace in Honolulu, Hawaii, and captured the animal. The animal was turned in to the Branch and later identified as a Mexican fishing bat. The bat was tested for rabies and found to be negative. It was later learned that a Panamanian ship arrived from Mexico and was docked at Pier 11, which could have been the source of the find.



QUALITY ASSURANCE DIVISION



John Ryan, Ph.D.
Administrator
(beginning July 31, 2006)

The Quality Assurance Division consists of two branches; Commodities and Measurement Standards. These branches provide inspection and enforcement services designed to ensure food safety and quality in agricultural products, measurement accuracy and fairness in the marketplace. This year, the division embarks on a new journey to bring newer technologies into these inspection arenas in an effort to provide more modern quality procedures and tools as we replace 50-year-old practices.

The division will be employing radio frequency identification devices (RFID) as part of a food safety system designed to impact food-borne illnesses through real-time tracking, sensor measurement and rapid recall. HDOA has been awarded \$500,000 in federal grant monies to pilot test an RFID food traceability project in the coming year. RFID and other agricultural traceability strategies will provide a basis for an overall food safety program designed to serve Hawaii agriculture and consumers.

This same technology will also be employed along with global positioning system (GPS) technology as Measurement Standards Branch personnel gain improved measurement accuracy over taxi meters, fuel pumps, scales and other industry devices that impact the consumer. These improvements are brought about through a greater cooperation between government and the business community and through employee training that includes continuous improvement and 6-sigma strategies.

COMMODITIES BRANCH

Jeri Kahana, Manager

The mission of the Commodities Branch is to "Set the Standards" and provide assurance that standardized, high quality, safe, and authentic Hawaii agricultural products can be showcased in Hawaii as well as throughout the world market through a fair and just agricultural business climate.

The Commodities Branch enhances the economic stability of Hawaii's agricultural industries by maintaining grade standards for locally produced fruits and vegetables, nuts, coffee, flowers and foliage, processed foods and other agricultural products. The branch provides unbiased, professional, and timely service-for-fee grade, condition, and origin certification and food safety audits, to add value and desirability to agricultural products. Under federal-state cooperative agreements, the branch provides federal certification for fresh and processed fruits and vegetables, eggs, seafood and meat, which may not otherwise be available to local clients, as well as state certification for origin and quality of green coffee, and origin of certain products.

The branch provides just, and unbiased enforcement to assure safety and fair business dealings in agricultural products, to protect the agricultural community as well as the general public. The branch administers laws and rules pertaining to fresh fruit, vegetable, coffee, egg labeling and advertising; minimum export quality; licensing of dealers in agricultural products; certificate of ownership requirements on the movement of agricultural commodities to deter agricultural theft; and sampling and testing of animal feed for label guarantee and adulteration.

The branch's Milk Control Section regulates and maintains the stability of the dairy industry in the Honolulu and Hawaii milk sheds by licensing producers and distributors of milk, establishing milk production quotas, setting minimum class 1 price paid to dairy producers, and conducting retail milk surveys and inspections. This special funded section is entirely self-funded through license fees assessed to milk producers and processors.

Listed below are brief overviews of developments that have impacted the branch's activities:

- ◆ Inspected and certified more than 701,000 cases of canned pineapple from Maui Pineapple Company, which continues to receive large federal government contracts and assessed over \$125,000 in fees.
- ◆ Continued fee-for-service papaya non-transgenic testing program utilizing the "Identity Preservation Protocol" program for tighter control of non-transgenic papayas that are exported to Japan. More than 2.9 million pounds of papayas were checked and more than \$44,000 in fees were assessed over the year.
- ◆ Educational visits were conducted on certificate of ownership requirements for agricultural commodities. Flyers were translated into nine foreign languages and distributed to various farmers and vendors.
- ◆ Hosted supervisory visits by USDA official from the Poultry Programs.



- ◆ Attended meetings with the coffee industry to discuss coffee grading certification and origin verification to ensure the quality of coffee being certified originated within the respective growing districts.
- ◆ Continued to conduct audits and educational visits with farmers on food safety awareness.
- ◆ Conducted greater number of fruit and vegetable inspections due to Defense Commissary Agency (DECA) implementing the use of a prime vendor for commissary orders.
- ◆ Increased acreage planted for seed corn production attributed to the increased volume of seed corn certified by the branch.
- ◆ Volume of locally produced milk decreased due to the closure of one Oahu dairy.
- ◆ Collected fee assessments totalling \$742,042; approximately two percent greater than the previous year.

A detailed table of activities for the Commodities Branch may be found on page 65.

MEASUREMENT STANDARDS BRANCH

William Pierpont, Manager

The Measurement Standards Branch works to protect consumers, businesses, and manufacturers from unfair practices, based on a measurement process or subject to a standard of quality. The goal is to minimize losses and inaccuracies due to incorrect or fraudulent commercial measuring equipment, processes, or substandard products.

The Standards and Technical Services Section assures that State measurement standards conform to national standards. It performs metrological calibration of the enforcement standards used by the branch and the field standards used by registered service agencies in testing, repairing, and calibrating commercial devices.

The Standards and Trade Practices Enforcement Section has the responsibility of assuring the consumer that transactions involving measuring instruments, labeling, content of packaged commodities, and pricing are accurate and fair to all parties.

Listed below is a brief overview of the branch's activities:

- ◆ The state Metrologist participated in two advanced training and certification workshops sponsored by the National Institute of Standards and Technology (NIST).
- ◆ The state metrology laboratory received re-certification by the National Institute of Standards and Technology.
- ◆ The metrology laboratory inspected and calibrated 174 mass test standards, 518 mass enforcement standards, and 560 field standards for service agencies conducting business in the State of Hawaii.
- ◆ The metrology laboratory inspected and calibrated 1 volumetric test standard, 16 volumetric enforcement standards, and 15 volumetric field standards for service agencies conducting business in the State of Hawaii.
- ◆ The branch received and investigated six odometer complaints.
- ◆ The compliance rate for stores inspected for price verification was 100 percent.
- ◆ The branch performed 137 retail gasoline octane tests.

A detailed table of activities of the Measurement Standards Branch may be found on Page 65.



AGRIBUSINESS DEVELOPMENT CORPORATION



Alfredo Lee
Executive Director

The Agribusiness Development Corporation (ADC) was established pursuant to Act 264, SLH 1994 to coordinate the development of Hawaii's agricultural industry and to facilitate its transition from a dual-crop (sugar and pineapple) industry to a diversified, multi-crop and animal industry. One of ADC's major goals is to preserve agricultural land and infrastructure abandoned by former plantations for current or future agricultural use. For administrative purposes, ADC is attached to the Chairperson's Office of the Hawaii Department of Agriculture (HDOA).

The ADC is headed by a board of directors consisting of eight private-sector members appointed by the governor and three ex-officio members to include Chairperson of HDOA, Chairperson of the Department of Land and Natural Resources (DLNR) and Director of the Department of Business, Economic Development and Tourism (DBEDT).

Board members during FY 2007: Teena Rasmussen (Chair), Robert Sutherland (Vice-Chair), Robert Osgood, Robert Cooper, Susan Harada, Wayne Katayama, David Rietow, Duane Lau, Sandra Kunimoto (Ex-Officio), Ted Liu (Ex-Officio), and Peter Young (Ex-Officio).

The following summarizes ADC's various projects and activities during FY 2007:

◆ **Kekaha Agricultural Lands and Infrastructure**

After the record rainfall in March and April of 2006, ADC funded approximately \$400,000 of work to repair the irrigation/drainage system and roadways. About 75 percent of the expenditures were eventually reimbursed by FEMA since Kauai was declared a disaster area.

ADC finished preparing Emergency Action Plans for the Puu Lua, Kitano, and Mana reservoirs on Kauai. Although classified as low-risk, each of the reservoirs has a regulated embankment dam as a feature. ADC

also requested a \$7 million CIP budget to bring these reservoir/dams up to standard. Work will involve removal of vegetation from the embankment and some appurtenant structure repairs.

On April 1, 2007, ADC executed a 20-year agreement with the Kekaha Agriculture Association (Coop) for the operations and maintenance of the common infrastructure which include roadways, two hydroelectric plants and the power grid, two irrigation systems, and a portion of the drainage system. At the same time, ADC continued to negotiate with some of the tenants for their 20-year land licenses.

In order to resolve an environmental concern, ADC contracted experts from University of Hawaii's College of Tropical Agriculture and Human Resources (CTAHR) to recommend methods to contain the waste from a piggery operation which could potentially contaminate the surrounding water bodies. The piggery operation was started by former sugar plantation employees. It is envisioned that the pig farmers will eventually form a cooperative and manage the area.

ADC is nearing completion of the second year of a three-year contract awarded by the U.S. Navy to operate and maintain the Kawaiele and Nohili pump stations and the related drainage canals. Besides the daily operations and monitoring of the pump stations, the contract involves maintenance of the canals, roads, and electrical transmission lines. Emergency opening of the drains at PMRF during flooding situations and continuous maintenance of the NPDES permit were also part of the work. Budget for this second optional year was \$1.3 million.

At the Kawaiele pump station, the 100-hp pump which was the work horse to maintain the water level at -2 ft. MSL became damaged beyond repair. It was eventually determined that silt accumulation at the inlet of the pump station had limited water flow into the wet well. To offer immediate relief, ADC performed emergency dredging of the wet well and surrounding canals which were not identified in the Navy contract. While the damaged pump was taken down for repair, the water level was maintained by the two other, 200 hp flood-control pumps.

◆ **Waiahole Water System (WWS)**

Del Monte, a major water user, ceased its Kunia pineapple operation abruptly in the fall of 2006. Originally, it was anticipated that the WWS would experience a 15-20 percent drop in water-delivery revenue for a transitional period until new farmers would occupy the former pineapple fields. Fortunately, due to favorable weather conditions and increased



Newly installed pump-back station at Reservoir 225 in the Waiahole Irrigation System.

diversified agriculture activities, demand for irrigation water had remained strong throughout the year.

In the meantime, the James Campbell Company, LLC, started selling off its Kunia agricultural land holding which was divided into nine parcels. Purchasers of the Campbell land parcels included: Pioneer Hi-Bred, Hawaii Agriculture Research Center, Ed Olson Trust, Monsanto and Actus Lend Lease (Army Housing). ADC continues to work with the landowner and the various parties to transition the land from pineapple, plantation-style operation to diversified agriculture.

ADC initiated work on the installation of a pump-back system at Reservoir 225. This system will be a similar setup which has proven to work very well at Reservoir 155 located further down stream. Upon completion, the pump-back system will improve operating efficiency of the ditch and reduce system overflow losses.

ADC continues to work with the water users to refine the master agreement. At its annual meeting, the Kunia Water Users Cooperative agreed to turn over the farmers' water meters to the ADC. This change will allow ADC to do preventive maintenance on the water meters and to take quick actions to repair or replace a meter if needed. In turn, the ADC Board of Directors approved removing the minimal usage clause on the master agreement since it was not consistent with conservation efforts.

◆ **Kau Irrigation District**

ADC board members visited with farmers and ranchers in the Kau area on a field trip in January of 2007. At its March 1, 2007 meeting, the ADC Board of Directors approved to take on the Kau irrigation systems as a project as it fits well into ADC's goal of preserving agricultural infrastructure abandoned by former plantations. The project will involve requesting the transfer of the state-owned water sources from DLNR to ADC and the negotiation of a long-term agreement with the Kau water users who had organized and formed a cooperative. An unofficial,

quick estimate puts the current annual farm gate value of the crops grown in Kau to \$10 - \$15 million.

◆ **East Kauai Irrigation System**

ADC continues to assist the East Kauai Water Users Cooperative to operate and maintain their irrigation system. ADC was the expending agency for \$100,000 appropriated for the operation and maintenance of the system. In addition to regular repairs and maintenance work, focus was also placed on maintenance of the reservoir and the spillway.

Transfer of the irrigation system and the approximately 7,000 acres of state-owned agricultural land in the Kalepa area to ADC was still on hold because of water diversion concerns and a potential contested case.

◆ **Wahiawa Irrigation System**

In the fall of 2006, Dole Food Company expressed interest in gifting its Wahiawa irrigation system to the state (ADC) as the cost to maintain and repair the system has become too expensive for a private company to absorb. This major irrigation system services up to 10,000 acres of former plantation lands on the North Shore of Oahu. ADC initiated an engineering study of the irrigation system, including Lake Wilson, with objectives to evaluate the cost of repairing the system and the potential benefits and liabilities of taking over this privately owned system.

◆ **Farm and Ranch Land Protection Program**

In August 2006, ADC executed an agreement with the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) and obligated \$1.8 million of federal funds for the purchase of an agricultural conservation easement in Kunia under the federal Farm and Ranch Land Protection Program (FRPP). In June 2007, ADC was also able to secure \$1.1 million from the Legacy Land Conservation fund managed by the DLNR as matching fund for the federal money. ADC continued to work with the various agencies and the landowner on issues relating to the purchase of the easement which is expected to close in 2008.

◆ **Kauai Tropical Fruit Disinfestation Facility**

ADC finished the \$150,000 improvement project at the facility which will still need to be re-certified by USDA- APHIS before treatment could start. In the meantime, ADC continued to work with CTAHR, the Kauai Farm Bureau Development Corporation, the County of Kauai and the Kauai Economic Opportunity (KEO), towards reopening of the Kauai's Tropical Fruit Disinfestation facility. Focus has been on papaya production on the island. ADC was also the expending agency for a \$250,000 legislative grant awarded to KEO for the training of papaya farmers and treatment facility workers.



- ◆ **Solar Water Disinfestation Demonstrative Project**
ADC provided funding to a group of researchers at CTAHR to demonstrate the use of solar technology to reduce the microbial load on irrigation water and make it safer for use on vegetable crops. Objective of the project was to evaluate the feasibility and operating costs associated with this technology in a remote farm setting. The demonstrative unit was assembled and operated at a farm in the Kula Ag Park on Maui. Test results showed that the microbial count reduction on the water treated by this unit was significant enough to make the technology worth considering as an alternative to chlorine, ozone, or ultraviolet treatments.
- ◆ **Development of a Tea Industry**
ADC partnered with CTAHR on this multi-year project to develop a tea industry on the Big Island. This year, the in-ground procedure for rooting tea cuttings was completed. This will be a simpler, faster, and lower cost method for producers to get tea plants in the field and will alleviate a bottleneck identified by the industry.
- ◆ **Agricultural Worker Housing Demonstrative Project**
Responding to the unavailability and the high cost to provide housing for agricultural workers, ADC began to look into the feasibility of assisting the farmers to build worker housing at its Kekaha property as a demonstrative project.
- ◆ **Purchase of Agriculture Land on Oahu**
Recently, there has been a movement, supported by the legislature, for the state to preserve agricultural land by ownership. During the 2007 legislative session, SB837 would have appropriated \$9.2 million for ADC to purchase agricultural land in the Kunia area which is under tremendous development pressure. Unfortunately, the bill was eventually vetoed by the Governor due to several concerns outlined in GM 1039.



Removal of silt at Kawaiele Pump Station wet well.

◆ **Legislative Reference Bureau (LRB) Report**

Pursuant to Act 267, Session Laws of Hawaii 2006, the LRB was charged to prepare a report on the ADC. Purpose of the report was to explain why the ADC did not prepare a mandated Hawaii agribusiness plan and to obtain suggestions from government agencies and stakeholders to improve ADC.

A total of 54 letters were sent out to government agencies and industry stakeholders. Responses were compiled and analyzed. The following is a summary of the findings of the report, titled "Agribusiness Development Corporation: Revisited."

- The Hawaii agribusiness plan required by section 163D-5 is unnecessary because no less than eight agribusiness plans had been written in the past and that just recently a comprehensive agricultural plan has been developed by the Hawaii Farm Bureau Federation.
- Many of the functions contained in section 163D-5 were already being handled by the various HDOA divisions and other agencies and organizations. Mandating ADC to assume these responsibilities was a duplication of efforts.
- ADC has evolved into an agency principally in taking over the operations of abandoned plantation infrastructure, primarily irrigation systems, as the Legislature had envisioned and described in section 163D-1.
- ADC is sorely underfunded and understaffed.
- ADC has been criticized for lack of formally adopted written plans and standards for monitoring and measuring the success or failure of a project or program. And that standards and qualifications for all positions be formally adopted for the proper evaluation of personnel.
- ADC was not meant to be like other state agencies, tied down in bureaucratic government red tape, but was to act as an independent agent that was able to move in immediate reaction to the need of the state agricultural industry. Respondents recommended that ADC be removed from under the control of the Board of Agriculture (BOA) and not be subject to the approval of BOA for every program or project it undertakes.
- ADC should be granted back its exemption from the Hawaii Procurement Code.

Attempts to change Chapter 163-D, Hawaii Revised Statutes, to better define ADC's role, to separate ADC from the DOA, and to gain back ADC's procurement exemption failed in the 2007 legislative session.



Recognizing the Cream of the Crop!

Each year, the State of Hawaii recognizes employees who have demonstrated exemplary government services through the Incentive Service Award Program (ISAP). ISAP recognizes employees who contribute to the efficiency, economy or other improvement of government operations, or who perform exceptionally meritorious acts or services in the public interest and for their loyalty and dedicated service. The following HDOA employees were recognized in 2007.



MANAGER OF THE YEAR

Dr. Isaac Maeda,
Manager,
Rabies Quarantine
Program

Under Dr. Maeda's tenure, the department implemented the Five-Day-or-Less Rabies Quarantine program that has substantially reduced the burden of quarantine on pets and their owners. Currently, nearly 83 percent of arriving dogs and cats qualify for release upon arrival at the airport.



EMPLOYEE OF THE YEAR

Domingo Cravalho, Jr.,
Section Chief,
Plant Quarantine
Inspection & Compliance

Domingo was key in developing the State's rapid response program to snake sightings and has also been integral in developing and implementing the biosecurity plan for Hawaii.



SUSTAINED SUPERIOR PERFORMANCE

Cheryl Mitsuyuki
Accountant Supervisor,
Fiscal Office

Cheryl has implemented the state's procurement system and lead the charge to develop an emergency procurement system, which will help the state respond better to any type of disaster. She was also recognized for her leadership and guidance to staff.



SUSTAINED SUPERIOR PERFORMANCE

Dr. Mohsen Ramadan
Exploratory Entomologist

Mohsen spent more than two months in East Africa searching for biological control agents to the erythrina gall wasp, which has devastated Hawaii's wiliwili trees and other plants. His work has provided one of the most promising solutions to the gall wasp problem.



TEAM OF THE YEAR

Earthquake Response Team

From Left: Laura Matsunaga, Ernest Alfonso, Brian Kau, Ann Lo-Shimazu, Randy Teruya and Glenn Okamoto. Not pictured: Steve Dias, Lori Farrell, Elroy Juan, William Leleo, Paul Matsuo, Irineo Pagat, Myron Poepoe, Mark Laa and Christopher Knaub.

On October 15, 2007, two major earthquakes severely damaged the Waimea and Lower Hamakua Irrigation Systems on the Big Island. The team worked to restore water flow to as many farmers in the area as possible with the help of community volunteers, inmates at Kulani Correctional Facility, the Hawaii National Guard, state and county workers and private contractors.

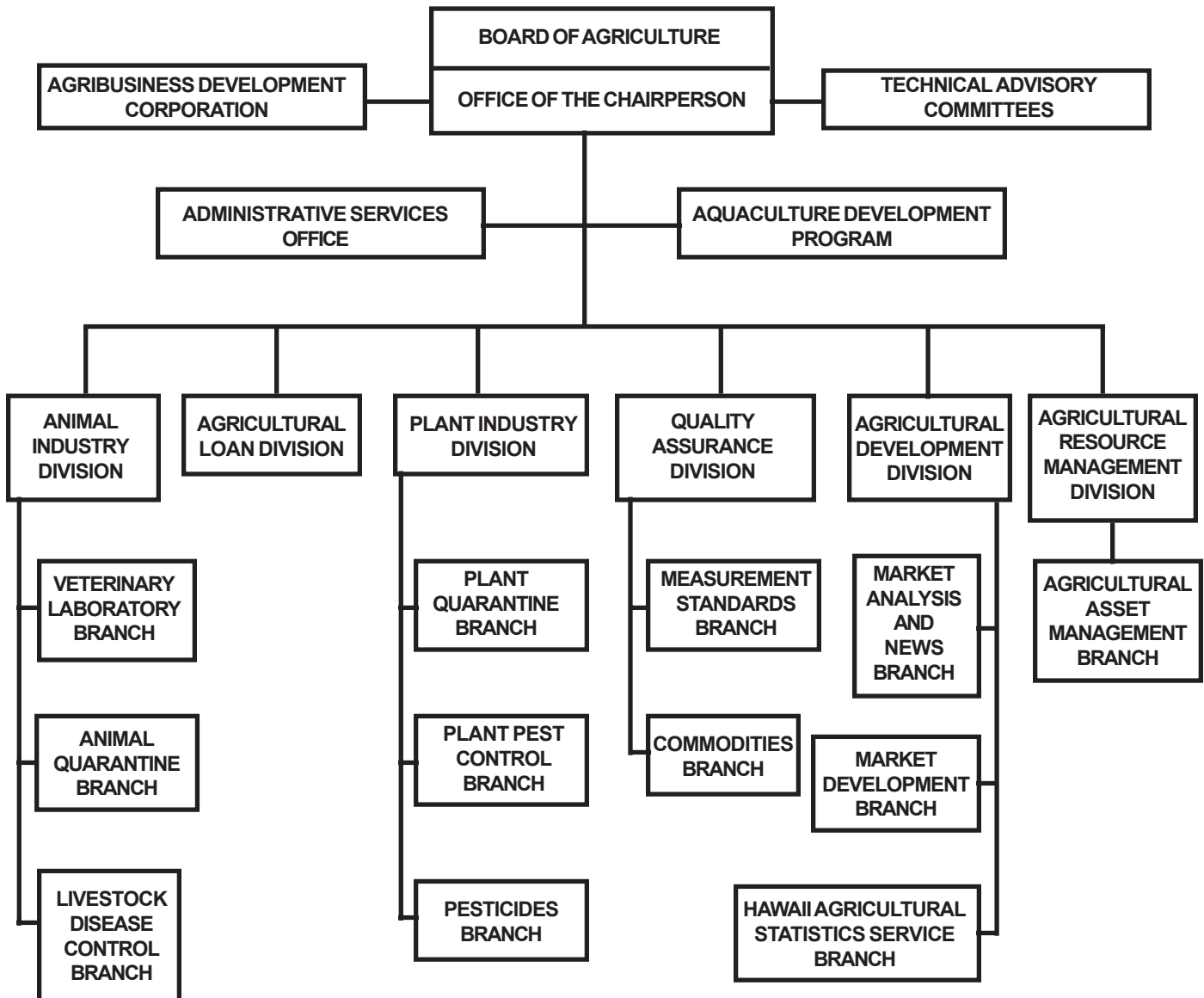


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HAWAII DEPARTMENT OF AGRICULTURE
ORGANIZATIONAL CHART





HAWAII BOARD OF AGRICULTURE



**Sandra Lee
Kunimoto**
Chairperson
1/03 - present



Alan Gottlieb
Member-at-Large
1st term ends
6/09



Craig Rasmussen
Member-at-Large
1st term ends
6/09



Carl Carlson, Jr.
Member-at-Large
2nd term ends
6/08



Douglas MacCluer
Maui County Member
1st term ends
6/08



Laurie Ho
Kauai County Member
1st Term ends
6/10



Diane Ley
Hawaii County Member
1st term ends
6/10



Laura Thielen
Ex Officio Voting Member
Chairperson,
Board of Land & Natural
Resources
9/07 - present



Ted Liu
Ex Officio Voting Member
Director, Dept. of
Business, Economic
Development & Tourism
12/02 - present



Dr. Andrew Hashimoto
Ex Officio Voting Member
Dean, College of Tropical
Agriculture & Human
Resources, University of
Hawaii
1/01 - present

**DEPARTMENT OF AGRICULTURE
OFFICE OF THE CHAIRPERSON**



Duane K. Okamoto
Deputy to the
Chairperson
4/05 - present



FINANCIAL STATEMENT - GENERAL FUND FY 2007

FINANCIAL STATEMENT - GENERAL FUND (Operating Funds) July 1, 2006 - June 30, 2007

Title of Fund	Fund No.	Appropriation Incl Transfers 2006-2007	Restricted	Allocation 2006-2007	Personal Services	Other Current Expenses	Total Expenditures 2006-2007	Outstanding Encumbrances 06/30/07	Balance 06/30/07
AGR 122 - PLANT PEST & DISEASE CONTROL									
Administration	122-0045	182,961		182,961	154,174	23,503	177,677	5,284	0
Plant Quarantine	122-0050	5,417,871		5,417,871	3,251,634	440,322	3,691,956	1,611,125	114,790
Plant Pest Control									
Biological Control	122-0060	970,219		970,219	813,256	120,974	934,230	35,027	962
Chemical Mechanical	122-0070	530,587		530,587	469,349	44,315	513,664	11,460	5,463
AGR 131 - RABIES QUARANTINE									
Animal Quarantine	131-0038	100,000		100,000	0	100,000	100,000	0	0
AGR 132 - ANIMAL DISEASE CONTROL									
Administration	132-0015	191,872		191,872	162,632	19,750	182,382	1,577	7,913
Livestock Disease Control	132-0017	572,046		572,046	501,275	39,343	540,618	31,428	0
Veterinary Laboratory	132-0025	547,040		547,040	427,235	93,109	520,344	21,671	5,025
AGR 141 - AGRICULTURAL RESOURCE MANAGEMENT									
Administration	141-0009	167,849		167,849	134,187	25,147	159,334	6,227	2,288
Irrigation Systems	141-0011	453,500		453,500	0	453,255	453,255	0	245
Mitigate Earthquake Damages									
	181-0011	5,610,000		5,610,000	42,202	867,226	909,428	4,197,584	502,988
2006Storm DamageRelief	323-0011	500,000		500,000	0	173,720	173,720	326,280	0
AGR 151 - QUALITY & PRICE ASSURANCE									
Administration	151-0150	157,231		157,231	100,939	23,655	124,594	32,637	0
Commodities	151-0090	1,166,725		1,166,725	987,481	64,634	1,052,115	90,643	23,967
AGR 153 - AQUACULTURE DEVELOPMENT PROGRAM									
	153-0007	599,719		599,719	372,469	139,475	511,944	70,041	17,734
AGR 161 - AGRIBUSINESS DEVELOPMENT & RESEARCH									
Agribusiness Development Corp.									
	161-0003	390,558		390,558	0	165,558	165,558	225,000	0
Operation & Maintenance of the East Kauai Irrg System									
	301-0003	100,000		100,000	0	52,000	52,000	48,000	0
AGR 171 - AGRICULTURAL DEVELOPMENT & MARKETING									
Agricultural Commodities Research & Development									
	171-0002	494,030		494,030	0	84,611	84,611	409,343	76
Administration	171-0085	116,787		116,787	108,022	5,931	113,953	2,833	1
Market Development	171-0095	1,647,288		1,647,288	212,291	634,021	846,312	800,975	1
Hawaii Agricultural Statistics Services									
	171-0100	442,180		442,180	415,406	23,764	439,170	3,009	1
Market Analysis & News	171-0110	165,917		165,917	108,329	34,844	143,173	22,744	0
Hawaiian Rainbow Papaya and Export Plan									
	302-0085	200,000		200,000	0	40,000	40,000	60,000	100,000
Assist Agricultural Community develop Energy Projects									
	303-0085	150,000		150,000	0	0	0	150,000	0
Emergency Relief-Assess Impact of Dams & Reservoirs									
	322-0100	50,000		50,000	0	47,000	47,000	0	3,000
AGR 192 - GENERAL ADMINISTRATION									
Administration	192-0001	1,743,147		1,743,147	1,457,584	205,005	1,662,589	79,344	1,214
Protocol Fund	198-0001	765		765	0	615	615	150	0
Agricultural Development & Agricultural Land Protection									
	321-0001	75,000		75,000	0	13,080	13,080	0	61,920
AGR 812 - MEASUREMENT STANDARDS									
Measurement Standards	012-0120	682,068		682,068	504,232	80,721	584,953	89,480	7,635
AGR 846 - PESTICIDES									
	046-0075	906,529		906,529	832,557	16,687	849,244	7,834	49,451
TOTAL		24,331,889	0	24,331,889	11,055,254	4,032,265	15,087,519	8,339,696	904,674

*footnotes on next page



Footnotes to General Fund 2007 Financial Statement:

- G-181 - Mitigate Earthquake Damages - transfer of funds from B&F (JV 203 JG 0773 dated 1/23/07)**
- G-301 - O&M OF East Kauai Irrigation System AW 111 (lapse date 6/30/07)**
- G-302 - Hawaiian Rainbow Papaya & Export Plan AW 113 (lapse date 6/30/07)**
- G-303 - Assist Agricultural Community to Develop Energy Projects AW 155 (lapse date 6/30/07)**
- G-321 - Agricultural Development & Agricultural Land Protection AW 82 (lapse date 6/30/07)**
- G-322 - Emergency Relief - Assess Impact on Dams & Reservoirs AW 121 (lapse date 6/30/07)**
- G-323 - 2006 Storm Damage Relief - transfer of funds from B&F (JV 330 JG 1212 5/14/07)**



FINANCIAL STATEMENT - SPECIAL FUNDS FY 2007

FINANCIAL STATEMENT - SPECIAL FUNDS July 1, 2006 - June 30, 2007

Title of Fund	Fund No.	Cash Balance 07/01/06	Transfers 2006-2007	Receipts 2006-2007	Personal Services	Other Current Expenses	Total Expenditures 2006-2007	Cash Balance 06/30/07	Outstanding Encumbrances 06/30/07
AGR 101 - FINANCIAL ASSISTANCE FOR AGRICULTURE									
Agricultural Loan Reserve Fund	S-301	2,460,313		1,085,218	601,959	228,577	830,536	2,714,995	28,383
Aquaculture Loan Reserve Fund	S-310	199,658		72,404	0	0	0	272,062	0
AGR 122 - PLANT PEST & DISEASE CONTROL									
Cooperative National Plant Pest Survey Program, Federal	S-201	61,102		193,848	2,997	118,352	121,349	133,601	107,191
Research & Development for the Brown Tree Snake, Federal	S-211	33,557		182,659	181,975	20,782	202,757	13,459	0
Hawaii Brown Tree Snake Detector Program, Federal	S-219	51,522		197,888	27,461	221,949	249,410	0	0
Exploration for Biological Control of Melon Fly, Federal	S-226	4,523		12,550	0	17,073	17,073	0	0
Alien Species Action Plan, Federal (DOT)	S-236	0		0	0	0	0	0	0
Survey/Detection of Red Imported Fire Ant, Federal	S-240	1,400		10,000	0	6,569	6,569	4,831	3,193
Detection Surveys for Papaya Mealybug, Federal	S-241	29,295		0	0	29,295	29,295	0	0
Survey for Glassy-Winged Sharpshooter, Federal	S-243	33,693		0	0	33,693	33,693	0	0
Seed Sampling Processing Services, Federal	S-246	0		2,500	0	2,500	2,500	0	0
Fireweed (Federal)	S-247	6,618		0	0	6,618	6,618	0	0
Biotechnology Program Development (Federal)	S-248	13,719		0	0	13,719	13,719	0	0
Plant Quarantine (Interagency Transfer)	S-314	90,873		302,632	296,514	26,345	322,859	70,646	20,618
Coqui Frog Control & Eradication	S-334	0	500,000	12,053	0	1,660	1,660	510,393	471,237
Hawaii Invasive Species Council Funds (DLNR Delegation)	S-350	501,884		0	14,768	468,248	483,016	18,868	18,868
AGR 131 - RABIES QUARANTINE									
Animal Quarantine	S-318	1,021,042		2,582,752	1,628,845	596,887	2,225,732	1,378,062	232,692
AGR 132 - ANIMAL DISEASE CONTROL									
Voluntary Scrapie Flock Certification Program, Federal	S-232	9,923		7	0	9,930	9,930	0	0
Voluntary Johne's Disease Herd Status Program, Federal	S-233	5,805		46,859	0	43,527	43,527	9,137	998
Foreign Animal Disease and Bovine Spongiform Encephalopathy Surveillance, Federal	S-234	527		3,775	0	527	527	3,775	0
Swine Health Protection, Federal	S-235	595		24,884	0	17,329	17,329	8,150	0
National Animal Identification System (Federal)	S-245	60,257		42,191	0	68,788	68,788	33,660	49,299
State Homeland Security (Federal-Civil Defense)	S-249	0		48,455	0	23,605	23,605	24,850	24,295
Highly Pathogenic Avian Influenza Virus (Federal)	S-250	0		59,000	0	38,320	38,320	20,680	9,477
Molokai Bovine TB Mitigation (Federal)	S-252	0		30,000	0	15,997	15,997	14,003	2,133
Contribution of Animal Quarantine Holding Facility	S-316	47		395,230	388,797	0	388,797	6,480	6,365

(Table continued on next page)



FINANCIAL STATEMENT - SPECIAL FUNDS (continued)
July 1, 2006 - June 30, 2007

Title of Fund	Fund No.	Cash Balance 07/01/06	Transfers 2006 - 2007	Receipts 2006 - 2007	Personal Services	Other Current Expenses	Total Expenditures 2006-2007	Cash Balance 06/30/07	Outstanding Encumbrances 06/30/07
(Continued from previous page)									
AGR 141 - AGRICULTURAL RESOURCE MANAGEMENT									
Hawaii Water Resources Study, Federal	S-218	0		80,364	0	80,364	80,364	0	94,612
Water Conservation Improvement Study (Federal)	S-251	0		22,526	0	22,526	22,526	0	24,902
Non-Agricultural Park Lands Special Fund	S-305	0		56,357	0	0	0	56,357	0
Agricultural Park Special Fund	S-317	786,787		501,160	195,874	119,934	315,808	972,139	36,504
Irrigation Repair & Maintenance Special Fund	S-322	0		0	0	0	0	0	0
Agricultural Park Special Fund Escrow Account	S-327	106,195		4,694	0	0	0	110,889	0
AGR 151 - QUALITY & PRICE ASSURANCE									
Commodities, Egg Product Inspection Act, Federal	S-202	2,198		14,642	10,575	2,447	13,022	3,818	0
Commodities, Seafood Inspection Program, Federal	S-220	864		1,069	1,661	85	1,746	187	0
Commodities, Meat Grading Program, Federal	S-221	959		0	0	0	0	959	0
National Organic Certification Cost -Share Program, Federal	S-230	71		3,987	0	3,970	3,970	88	0
Commodities, Milk Control	S-315	403,955		143,683	83,290	36,948	120,238	427,400	2,765
AGR 153 - AQUACULTURE DEVELOPMENT PROGRAM									
Aquaculture Development, Federal	S-206	0		0	0	0	0	0	0
Aquaculture Development	S-328	35,184		9,846	0	4,332	4,332	40,698	2,610
AGR 161 - AGRIBUSINESS DEVELOPMENT & RESEARCH									
Maintenance & Operation of Kekaha Drainage System, Federal	S-224	249,150	(236,440)	0	0	12,710	12,710	0	0
FEMA – March 2006 Flood	S-292	0		177,603	0	177,603	177,603	0	0
AGR 171 - AGRICULTURAL DEVELOPMENT & MARKETING									
Agricultural Market Information System, Federal	S-212	11,775		40,000	0	27,875	27,875	23,900	36,193
National Organic Certification Cost-Share Program, Federal	S-230	71		3,987	0	3,970	3,970	88	0
Economic Assessment of Select Hawaii Agricultural Exports, Federal	S-238	8,665		16,000	0	5,414	5,414	19,251	15,700
AGR 846 - PESTICIDES									
EPA/DOA Pesticide Enforcement Program, Federal	S-205	16,399		310,971	139,709	128,688	268,397	58,973	49,037
Cooperative Pesticide Recordkeeping Program, Federal	S-213	2,654		7,651	435	4,791	5,226	5,079	354
TOTAL		6,211,209	263,560	6,695,458	3,574,860	2,637,977	6,212,837	6,957,390	1,237,426

S-224 Maintenance/Operation - Kekaha Drainage System transfer to S307 revolving fund JV 85 (JS 1996 dated 10/18/06)
S-334 Coqui Frog Control & Eradication (DLNR transfer) JV 29 (JS 0288 dated 7/26/06)



FINANCIAL STATEMENT - BOND FUNDS FY 2007

FINANCIAL STATEMENT - BOND FUNDS July 1, 2006 - June 30, 2007

Title of Fund	Fund No.	Beg. Balance/ Appropriation 2006-2007	Rever- sion	Allocation 2006-2007 (Incl. O/S Enc)	Transfers	Lapses	Other Current Expenses	Outstanding Encumbrances 06/30/07	Total Expend & Enc 2006-2007	Available Balance 06/30/07
Upcountry Maui Watershed, Maui - Plans, Act 328/97										
B-97-406		20	0	20	0	0	20	0	20	0
Upcountry Maui Watershed, Maui - Design, Act 328/97 (116/98)										
B-97-407		469	0	469	0	0	469	0	469	0
Upcountry Maui Watershed, Maui - Design, Act 328/97 (116/98)										
B-97-801		1,000	0	1,000	0	0	730	0	730	270
Upcountry Maui Watershed, Maui - Construction, Act 328/97 (116/98)										
B-97-802		0	0	0	0	0	0	0	0	0
Lower Hamakua Ditch Water Project, Hawaii - Design, Act 328/97 (116/98)										
B-98-403		0	0	6,300	0	0	0	6,300	6,300	0
Lower Hamakua Ditch Water Project, Hawaii - Construction, Act 328/97 (116/98)										
B-98-404		21,573	0	25,254	0	0	21,537	3,681	25,218	36
Drainage Improvements, Waimanalo Irrigation System, Oahu - Plans, Act 91/99										
B-99-401		48,061	0	48,061	0	0	0	0	0	48,061
Drainage Improvements, Waimanalo Irrigation System, Oahu - Land, Act 91/99										
B-99-402		25,000	0	25,000	0	0	0	0	0	25,000
Drainage Improvements, Waimanalo Irrigation System, Oahu - Construction, Act 91/99										
B-99-404		89,128	0	89,128	0	0	0	0	0	89,128
Lower Hamakua Ditch Watershed Project, Hawaii - Plans, Act 91/99										
B-99-406		50	0	50	0	0	50	0	50	0
Lower Hamakua Ditch Watershed Project, Hawaii - Land, Act 91/99										
B-99-407		58,000	0	58,000	0	0	394	0	394	57,606
Lower Hamakua Ditch Watershed Project, Hawaii - Design, Act 91/99										
B-99-408		211	0	211	0	0	211	0	211	0
Drainage Improvements, Waimanalo Irrigation System, Oahu - Construction, Act 91/99 (281/00)										
B-00-400		27,484	0	27,484	0	0	0	0	0	27,484
Lower Hamakua Ditch Watershed Project, Hawaii - Plans, Act 91/99 (281/00)										
B-00-402		480	0	1,842	0	0	480	1,362	1,842	0
Lower Hamakua Ditch Watershed Project, Hawaii - Land, Act 91/99 (Act 281/00)										
B-00-403		39,625	0	39,625	0	0	0	0	0	39,625
Lower Hamakua Ditch Watershed Project, Hawaii - Construction, Act 91/99 (281/00)										
B-00-405		0	0	21,125	0	0	0	21,125	21,125	0
Plantation Irrigation/Drainage System Improvements, Statewide - Plans, Act 259/01										
B-01-400		134,578	0	136,169	0	0	0	1,591	1,591	134,578
Plantation Irrigation/Drainage System Improvements, Statewide - Design, Act 259/01										
B-01-401		301,128	0	301,128	0	0	0	0	0	301,128
Plantation Irrigation/Drainage System Improvements, Statewide - Construction, Act 259/01										
B-01-402		770,000	0	1,170,000	0	0	400,590	0	400,590	769,410
Plantation Irrigation/Drainage System Improvements, Statewide - Equipment, Act 259/01										
B-01-403		0	0	200,114	0	0	0	200,114	200,114	0
Lower Hamakua Ditch Watershed, Hawaii - Design, Act 259/01										
B-01-407		1,000	0	1,000	0	0	0	0	0	1,000
Lower Hamakua Ditch Watershed, Hawaii - Construction, Act 259/01										
B-01-408		174	0	62,628	0	0	43,642	18,986	62,628	0
Upcountry Maui Watershed, Maui - Design, Act 259/01(3/01, 177/02)										
B-01-800		497,144	0	497,647	0	0	1,204	0	1,204	496,443
Upcountry Maui Watershed, Maui - Construction, Act 259/01 (3/01, 177/02)										
B-01-801		15	0	648,094	0	0	572,257	75,823	648,080	14
Upcountry Maui Watershed, Maui - Land, Act 259/01 (3/01, 177/02)										
B-01-802		213,227	0	237,227	0	0	0	24,000	24,000	213,227
Lower Hamakua Ditch Watershed, Hawaii - Plans, Act 259/01 (177/02)										
B-02-400		27,383	0	42,604	0	0	17,779	24,825	42,604	0
Lower Hamakua Ditch Watershed, Hawaii - Design, Act 259/01 (177/02)										
B-02-401		340,000	0	340,000	0	0	0	30,359	30,359	309,641

(Table continued on next page)



FINANCIAL STATEMENT - BOND FUNDS (continued)
July 1, 2006 - June 30, 2007

Title of Fund	Fund No.	Beg. Balance/ Appropriation 2006-2007	Rever- sion	Allocation 2006-2007 (Incl. O/S Enc)	Transfers	Lapses	Other Current Expenses	Outstanding Encumbrances 06/30/07	Total Expend & Enc 2006-2007	Available Balance 06/30/07
(Continued from previous page)										
Lower Hamakua Ditch Watershed, Hawaii - Construction, Act 259/01 (177/02)										
	B-02-402	1,605,518	0	3,634,106	0	0	1,360,784	689,248	2,050,032	1,584,074
State Agricultural Water/Use Development Plan, Statewide - Plans, Act 259/01 (177/02)										
	B-02-406	26,441	0	28,159	0	0	0	1,718	1,718	26,441
Agricultural Water/Infrastructure Development, Statewide - Plans, Act 259/01 (177/02)										
	B-02-407	1,000	0	1,000	0	0	0	0	0	1,000
Agricultural Water/Infrastructure Development, Statewide - Land, Act 259/01 (177/02)										
	B-02-408	1,000	0	1,000	0	0	0	0	0	1,000
Agricultural Water/Infrastructure Development, Statewide - Design, Act 259/01 (177/02)										
	B-02-409	1,000	0	1,000	0	0	0	0	0	1,000
Agricultural Water/Infrastructure Development, Statewide - Construction, Act 259/01 (177/02)										
	B-02-410	1,672,188	0	1,761,695	0	0	0	89,507	89,507	1,672,188
Agricultural Water/Infrastructure Development, Statewide - Equipment, Act 259/01 (177/02)										
	B-02-411	1,000	0	1,000	0	0	0	0	0	1,000
Kekaha Drainage & Irrigation System, Kauai - Plans, Act 259/01 (177/02)										
	B-02-417	250,000	0	250,000	0	0	0	0	0	250,000
Kekaha Drainage & Irrigation System, Kauai - Design, Act 259/01 (177/02)										
	B-02-418	500,000	0	500,000	0	0	0	0	0	500,000
Kekaha Drainage & Irrigation System, Kauai - Construction, Act 259/01 (177/02)										
	B-02-419	2,000,000	0	2,000,000	0	0	0	0	0	2,000,000
Kekaha Drainage & Irrigation System, Kauai - Equipment, Act 259/01 (177/02)										
	B-02-420	250,000	0	250,000	0	0	0	0	0	250,000
Molokai Irrigation System Improvements, Molokai - Design, Act 41/04 (200/03)										
	B-04-400	0	0	49,839	0	0	12,930	36,909	49,839	0
Agricultural Water & Infrastructure Development, Statewide - Plans, Act 41/04 (200/03)										
	B-04-404	50,000	0	50,000	0	0	0	0	0	50,000
Agricultural Water & Infrastructure Development, Statewide - Land, Act 41/04 (200/03)										
	B-04-405	250,000	0	250,000	0	0	0	0	0	250,000
Agricultural Water & Infrastructure Development, Statewide - Design, Act 41/04 (200/03)										
	B-04-406	50,000	0	50,000	0	0	0	0	0	50,000
Agricultural Water & Infrastructure Development, Statewide - Construction, Act 41/04 (200/03)										
	B-04-407	2,453,171	0	2,600,000	0	0	0	146,829	146,829	2,453,171
Agricultural Water & Infrastructure Development, Statewide - Equipment, Act 41/04 (200/03)										
	B-04-408	50,000	0	50,000	0	0	0	0	0	50,000
Pauuilo Rendereing Plant, Hawaii - Plans, Act 41/04 (200/03)										
	B-04-409	0	0	58,029	0	0	41,528	16,501	58,029	0
Pauuilo Rendereing Plant, Hawaii - Design, Act 41/04 (200/03)										
	B-04-410	0	0	34,971	0	0	0	34,971	34,971	0
Kauai Tropical Fruit Disinfestation, Kauai - Design, Act 41/04 (200/03)										
	B-04-413	0	0	2,756	0	0	2,756	0	2,756	0
Kauai Tropical Fruit Disinfestation, Kauai - Construction, Act 41/04 (200/03)										
	B-04-414	0	0	95,000	0	0	95,000	0	95,000	0
Waimea Irrigation System, Hawaii - Plan, Act 178/05										
	B-05-400	1,000	0	1,000	0	0	0	0	0	1,000
Waimea Irrigation System, Hawaii - Design, Act 178/05										
	B-05-401	53,000	0	53,000	0	0	42,694	7,030	49,724	3,276
Waimea Irrigation System, Hawaii - Construction, Act 178/05										
	B-05-402	296,000	0	296,000	0	0	0	0	0	296,000
Molokai Irrigation System - Plan, Act 178/05										
	B-05-403	0	0	0	0	0	0	0	0	0
Molokai Irrigation System - Design, Act 178/05										
	B-05-404	22,293	0	200,000	0	0	115,002	46,283	161,285	38,715
Molokai Irrigation System - Construction, Act 178/05										
	B-05-405	550,000	0	550,000	0	0	22,141	0	22,141	527,859

(Table continued on next page)



FINANCIAL STATEMENT - BOND FUNDS FY 2007

FINANCIAL STATEMENT - BOND FUNDS (continued) July 1, 2006 - June 30, 2007

Title of Fund	Fund No.	Beg. Balance/ Appropriation 2006-2007	Rever- sion	Allocation 2006-2007 (Incl, O/S Enc)	Transfers	Lapses	Other Current Expenses	Outstanding Encumbrances 06/30/07	Total Expend & Enc 2006 - 2007	Available Balance 06/30/07
(Continued from previous page)										
Upcountry Maui Watershed - Plan, Act 178/05										
B-05-407		10,000	0	10,000	0	0	0	0	0	10,000
Upcountry Maui Watershed - Land, Act 178/05										
B-05-408		100,000	0	100,000	0	0	0	0	0	100,000
Upcountry Maui Watershed - Design, Act 178/05										
B-05-409		100,000	0	100,000	0	0	0	0	0	100,000
Upcountry Maui Watershed - Construction, Act 178/05										
B-05-410		1,280,000	0	1,280,000	0	0	263	1,166,559	1,166,822	113,178
Upcountry Maui Watershed - Equipment, Act 178/05										
B-05-411		10,000	0	10,000	0	0	0	0	0	10,000
Lower Hamakua Ditch System, Hawaii L/S, Act 178/05										
B-05-412		1,000,000	0	1,000,000 (1,000,000)		0	0	0	0	0
Lower Hamakua Ditch System, Hawaii-Plans (FF), Act 178/05										
B-05-413		0	0	0	32,000	0	0	32,000	32,000	0
Lower Hamakua Ditch System, Hawaii-Construction (FF), Act 178/05										
B-05-415		0	0	0	968,000	0	0	57,050	57,050	910,950
Paaui Rendering Plant, Hawaii - Construction, Act 160/06 (178/05)										
B-06-400		1,186,000	0	1,186,000	0	0	0	0	0	1,186,000
Misc Health, Safety, Code, and Other Requirements, Act 160/06 (178/05)										
B-06-401		200,000	0	200,000 (200,000)		0	0	0	0	0
Misc Health, Safety, Code, Other Requirements, Construction, Act 160/06 (178/06)										
B-06-402		800,000	0	800,000 (800,000)		0	0	0	0	0
TOTAL		17,365,361	0	21,434,735	(1,000,000)	0	2,752,461	2,732,771	5,485,232	14,949,503



FINANCIAL STATEMENT - REVOLVING FUNDS
July 1, 2006 - June 30, 2007

Title of Fund	Fund No.	Cash Balance 07/01/06	Transfers 2006-2007	Receipts 2006-2007	Personal Services	Other Current Expenses	Total Expenditures 2006-2007	Cash Balance 06/30/07	Outstanding Encumbrances 06/30/07
AGR 101 - FINANCIAL ASSISTANCE FOR AGRICULTURE									
Agricultural Loan	S-303	9,146,392	0	2,955,384	0	1,759,780	1,759,780	10,341,996	0
Aquaculture Loan	S-311	500,178	0	12,132	0	153,702	153,702	358,608	0
AGR 122 - PLANT PEST & DISEASE CONTROL									
Microorganism Import Permit Fund	S-313	0	0	0	0	0	0	0	0
Permit Revolving Fund	S-326	24,164	0	13,265	13,200	3,426	16,626	20,803	5,431
AGR 141 - AGRICULTURAL RESOURCE MANAGEMENT									
Irrigation Systems	S-320	582,654	0	1,455,859	524,481	787,995	1,312,476	726,037	49,695
AGR 151 - QUALITY & PRICE ASSURANCE									
Certification Services	S-302	238,300	0	325,431	180,498	24,658	205,156	358,575	13,127
AGR 161 - AGRIBUSINESS DEVELOPMENT & RESEARCH									
Agribusiness Development	S-307	1,179,856	236,440	1,956,405	234,014	1,774,301	2,008,315	1,364,386	535,488
Waiahole Water System	S-325	778,949	0	1,046,836	353,652	525,003	878,655	947,130	77,709
AGR 846 - PESTICIDES									
Pesticide Use Program	S-324	745,072	0	750,575	291,805	388,477	680,282	815,365	360,262
TOTAL		13,195,565	236,440	8,515,887	1,597,650	5,417,342	7,014,992	14,932,900	1,041,712

S-307 Hawaii Agricultural Development Revolving Fund transfer from S-224 (JV 85 JS 1996 dated 10/18/06)



FINANCIAL STATEMENT - CIP FUNDS FY 2007

FINANCIAL STATEMENT - CIP FUNDS (General, Special and Revolving) July 1, 2006 - June 30, 2007

Title of Fund	Fund No.	Beg. Balance/ Appropriation 2006-2007	Rever- sion	Allocation 2006-2007 (Incl. O/S Enc)	Transfers	Lapses	Other Current Expenses	Outstanding Encumbrances 06/30/07	Total Expend & Enc 2006-2007	Available Balance 06/30/07
CIP Repair & Maintenance of Irrigation Systems, Act 233/06										
G-06-400		11,886,000	0	11,886,000	0	0	13,978	131,360	145,338	11,740,662
Upcountry Maui Watershed, Maui - Construction										
S-97-276		370	0	370	0	0	0	0	0	370
Drainage, Waimanalo Irrigation System, Oahu - Construction, Act 91/99										
S-99-274		64,405	0	64,405	0	0	0	0	0	64,405
Lower Hamakua Ditch Watershed, Hawaii - Construction, Act 91/99										
S-99-279		88,675	0	88,675	0	0	0	0	0	88,675
Lower Hamakua Ditch Watershed, Hawaii - Lump Sum, Act 91/99 (281/00)										
S-00-270		940,000	0	940,000	0	0	0	0	0	940,000
Lower Hamakua Ditch Watershed, Hawaii - Construction, Act 91/99 (281/00)										
S-00-274		15,170	0	39,976	0	0	0	24,806	24,806	15,170
Lower Hamakua Ditch Watershed, Hawaii - Design & Construction										
S-00-276		26,630	0	171,678	0	0	0	145,048	145,048	26,630
Lower Hamakua Ditch Watershed, Hawaii - Construction										
S-00-277		10,772	0	53,758	0	0	0	42,986	42,986	10,772
Lower Hamakua Ditch Watershed, Hawaii - Design										
S-01-270		5,620	0	10,420	0	0	0	0	0	10,420
Lower Hamakua Ditch Watershed, Hawaii - Construction										
S-01-271		93,458	0	157,335	0	0	5,877	17,032	22,909	134,426
Upcountry Maui Watershed, Maui - Design										
S-01-272		2,439	0	2,439	0	0	0	0	0	2,439
Upcountry Maui Watershed, Maui - Construction										
S-01-273		54,899	0	849,807	0	0	572,257	222,651	794,908	54,899
Plantation Irrigation Drainage Systems, Statewide - Plans										
S-01-274		0	0	75,000	0	0	75,000	0	75,000	0
State Agricultural Water Use Development Plan, Statewide - Plans, Act 259/01(177/02)										
S-02-270		40,000	0	40,000	0	0	0	0	0	40,000
Lower Hamakua Ditch Watershed, Hawaii - Design										
S-02-271		47,275	0	117,991	0	0	16,880	46,636	63,516	54,475
Lower Hamakua Ditch Watershed, Hawaii - Construction										
S-02-272		353,451	0	1,551,600	0	0	534,782	663,367	1,198,149	353,451
Upcountry Maui Watershed, Maui - Design										
S-02-273		152,340	0	631,764	0	0	70,865	383,967	454,832	176,932
Upcountry Maui Watershed, Maui - Construction										
S-02-274		1,400,000	0	1,171,559	0	0	0	1,166,559	1,166,559	5,000
State Agricultural Water Use Development Plan, Statewide - Plans, Act 200/03										
S-03-270		150,000	0	150,000	0	0	0	0	0	150,000
Agricultural Water & Infrastructure Development, Statewide - Lump Sum, Act 41/04 (200/03)										
S-04-270		3,250,000	0	3,250,000	(1,100,000)	0	0	0	0	2,150,000
Agr Water & Infrastructure Development, S/W-Construction, Act 200/03										
S-04-274		0	0	0	1,100,000	0	0	0	0	1,100,000
Lower Hamakua Ditch System, Hawaii - L/S										
S-05-270		3,000,000	0	3,000,000	(3,000,000)	0	0	0	0	0
Lower Hamakua Ditch System, Hawaii-Design (FF) Act 178/05										
S-05-272		0	0	0	267,150	0	0	267,150	267,150	0
Lower Hamakua Ditch System, Hawaii-Construction (FF) Act 178/05										
S-05-273		0	0	0	2,732,850	0	0	0	0	2,732,850
Emergency Relief - Kailua Reservoir/Dam Flood Mitigation Act 118/06										
S-05-400		1,000,000	0	1,000,000	0	(1,000,000)	0	0	0	0
South Kona Watershed Project, Hawaii - Plan										
S-06-270		110,000	0	110,000	0	0	0	0	0	110,000
2006 Earthquake Damage, Hawaii - Design & Construction										
S-06-271		4,455,000	0	4,455,000	0	0	0	4,229,240	4,229,240	225,760
TOTAL		27,146,504	0	29,817,777	0	(1,000,000)	1,289,639	7,340,802	8,630,441	20,187,336

*footnotes on bottom of page 57


FINANCIAL STATEMENT - TRUST FUNDS
July 1, 2006 - June 30, 2007

Title of Fund	Fund No.	Cash Balance 07/01/06	Receipts 2006-2007	Personal Services	Other Current Expenses	Total Expenditures 2006-2007	Cash Balance 06/30/07	Outstanding Encumbrances 06/30/07
AGR 122 - PLANT PEST & DISEASE CONTROL								
Contribution of Overtime, Plant Quarantine Inspection								
T-902		28,195	528,431	486,930	29,010	515,940	40,686	12,023
Temporary Deposit, Plant Industry (Bond for Animals)								
T-904		8,600	17,000	0	8,000	8,000	17,600	0
AGR 132 - ANIMAL DISEASE CONTROL								
Interim Storage of Containerized Animals								
T-910		0	2,000	0	0	0	2,000	0
AGR 141 - AGRICULTURAL RESOURCE MANAGEMENT								
OHA Ceded Land Proceeds	T-901	0	92,533	0	90,671	90,671	1,862	0
AGR 151 - QUALITY & PRICE ASSURANCE								
Temporary Deposit, Marketing								
T-903		495	45,005	0	40,911	40,911	4,589	0
Producer's Settlement Fund								
T-906		0	0	0	0	0	0	0
AGR 161 - AGRIBUSINESS DEVELOPMENT & RESEARCH								
Security Deposits - Kekaha	T-909	45,707	26	0	0	0	45,733	0
OHA Ceded Land Proceeds	T-901	0	49,005	0	49,005	49,005	0	0
AGR 192 - GENERAL ADMINISTRATION								
Temporary Deposit	T-908	14,227	42,235	0	37,500	37,500	18,962	0
TOTAL		97,224	776,235	486,930	255,097	742,027	131,432	12,023

*footnotes for CIP Funds continued from Page 56:

G-06-400 \$11,886,000 AW 233(lapse date 6/30/08)

S-02-274 increase \$171,559 jv 26

S-01-274 increase \$110,000 & S-02-273 \$270,000 jv 98

S-01-274 decrease \$110,000 & S-06-270 increase \$110,000

S-04-270 decrease \$1,100,000 & S-04-274 increase \$1,100,000 jv 250

S-05-270 decreases \$3,000,000 & S-05-272 increase \$267,150 & S-05-273 increase \$2,732,850 jv 293

S-06-271 increase \$450,000 jv 319

S-06-271 increase \$2,061,000 jv 354

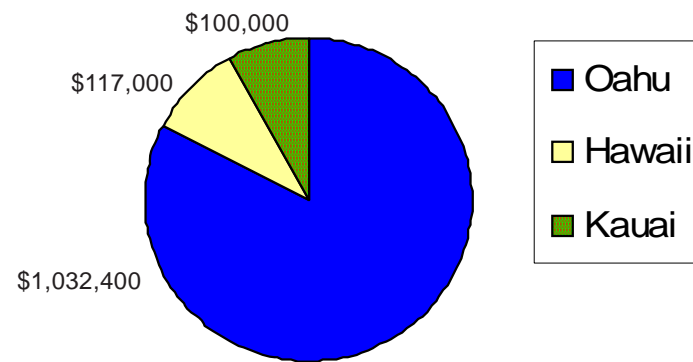
S-06-271 decrease \$36,300 jv 355

S-06-271 increase \$1980300 & S-02-274 decrease \$400,000 jv 380

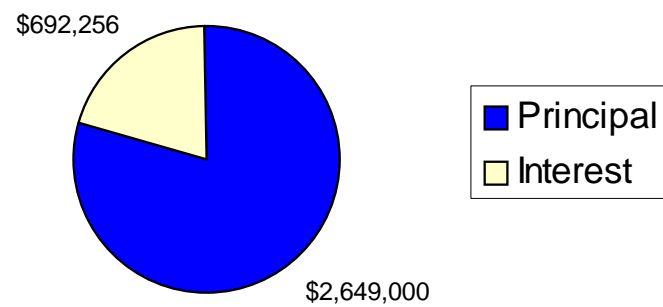


Agricultural Loan Data for FY 2007

APPROVED LOANS FY 2007



COLLECTIONS FOR FY 2007





LEASE DISPOSITIONS FY 2007

LESSEE/LEASE NO.	USE	TAX MAP KEY	RENT	DISPOSITION	AG PARK
HAWAII DISTRICT					
Dean Maruyama/S-4857	Diversified Ag	7-3-49:6	\$1,000	Assignment	Keahole
Hawaiian Sunshine Nursery/ S-4773	Diversified Ag	2-2-56:52	\$1,501.50	Assignment	Panaewa
Robert Albert and Genevieve Albert/ /S-4855	Diversified Ag	7-3-49:30	\$1,000	Assignment	Keahole
Richard Clark and Howard Clark/ S-4691	Diversified Ag	7-3-49:12	\$760	Assignment	Keahole
Jed Ramos/S-4823	Diversified Ag	1-5-116:60	\$692	Assignment	Pahoa
George Poppas/S-4830	Diversified Ag	1-5-116:51	\$1,800	Negotiation	Pahoa
Robert Stearns/S-4434	Diversified Ag	1-5-116:13	\$5,500	Negotiation	Pahoa
John Rozett/S-4433	Diversified Ag	1-5-116:15	\$4,300	Negotiation	Pahoa
OAHU DISTRICT					
RD Environments LLC/S-4935	Diversified Ag	4-1-35:14	\$5,398	Assignment	Waimanalo
Grove Farm Fish & Poi, LLC/S-8501	Aquaculture	9-1-31:26	\$6,900	Assignment	Kalaeloa
Martinez, E./ Rev. Permit 10	Livestock/ Agriculture	4-1-10:69	\$3,000	Renewed	Waimanalo

IRRIGATION SYSTEMS FY 2007

HONOKAA-PAAUILO IRRIGATION SYSTEM (LHP) FY 2007

Month	Water Sold (Gallons)	Acreage Served	Assessment Charges	Water Charges
2006				
July	3,519,000	758	\$ 2,841.00	\$ 1,266.84
August	4,948,000	758	2,841.00	1,781.28
September	4,598,000	758	2,841.00	1,655.28
October	3,746,000	758	0.00	1,348.56
November	250,000	758	0.00	90.00
December	102,000	758	0.00	36.72
2007				
January	186,000	758	0.00	66.96
February	137,000	758	0.00	49.32
March	694,000	758	0.00	249.84
April	156,000	758	0.00	56.15
May	580,000	758	0.00	208.80
June	797,000	758	0.00	286.92
TOTAL	19,713,000		\$ 8,523.00	\$ 7,096.67

HONOKAA-PAAUILO IRRIGATION SYSTEM (LHL) FY 2007

Month	Number of Livestock	Water Sold (Gallons)	Acreage Served	Assessment Charges	Water Charges
2006					
July	1,547	1,090,000	6,271	\$ 1,166.39	\$ 421.92
August	1,547	1,397,000	6,271	1,166.39	471.04
September	1,547	1,891,000	6,271	1,166.39	550.08
October	1,547	991,000	6,271	0.00	406.08
November	1,547	140,000	6,271	0.00	269.92
December	1,547		6,271	0.00	247.52
2007					
January	1,547		6,271	0.00	247.52
February	1,547		6,271	0.00	247.52
March	1,547		6,271	0.00	247.52
April	1,547		6,271	0.00	247.52
May	1,547	582,000	6,271	0.00	340.64
June	1,547	312,000	6,271	0.00	297.44
TOTAL		6,403,000		\$ 3,499.17	\$ 3,994.72

Tables continued on next page



AGRICULTURAL RESOURCE MANAGEMENT DIVISION

WAIMANALO IRRIGATION SYSTEM FY 2007

Month	Water Sold (Gallons)	Acreage Served	Assessment Charges	Water Charges
2006				
July	11,537,300	1,127	\$ 3,040.96	\$ 4,153.46
August	8,231,900	1,127	3,040.96	2,963.47
September	8,776,700	1,127	3,040.96	3,159.64
October	11,719,000	1,127	3,040.96	4,218.87
November	6,627,000	1,127	3,040.96	2,385.71
December	6,532,300	1,127	3,040.96	2,351.61
2007				
January	5,026,500	1,127	3,040.96	1,809.52
February	6,077,800	1,127	3,040.96	2,187.35
March	7,363,900	1,127	3,040.96	2,749.01
April	11,246,200	1,127	3,040.96	4,048.64
May	16,389,100	1,127	3,040.96	5,900.06
June	13,448,500	1,127	3,040.96	4,841.45
TOTAL	112,976,200		\$ 36,491.52	\$ 40,768.79

KAHUKU AG PARK IRRIGATION SYSTEM FY 2007

Month	Water Sold (Gallons)	Acreage Served	Assessment Charges	Water Charges
2006				
July	7,253,600	168	\$ 565.82	\$ 2,611.30
August	5,052,200	168	565.82	1,818.77
September	4,534,800	168	565.82	1,632.52
October	4,044,100	168	565.82	1,455.89
November	2,745,000	168	565.82	988.21
December	2,853,900	168	565.82	1,027.40
2007				
January	2,825,500	168	565.82	1,017.18
February	2,926,400	168	565.82	1,053.52
March	3,399,500	168	565.82	1,223.80
April	3,274,500	168	565.82	1,178.83
May	5,394,000	168	565.82	1,941.84
June	3,147,000	168	565.82	1,132.93
TOTAL	47,450,500		\$ 6,789.84	\$ 17,082.19

MOLOKAI IRRIGATION SYSTEM FY2007

Month	Water Sold (Gallons)	Acreage Served	Assessment Charges	Water Charges
2006				
July	87,373,000	2,769	\$ 3,311.46	31,454.28
August	93,701,000	2,769	3,311.46	33,732.36
September	85,524,000	2,769	3,311.46	30,788.64
October	61,824,000	2,769	3,311.46	20,711.37
November	42,608,000	2,769	3,311.46	14,274.02
December	74,171,000	2,769	3,311.46	24,847.65
2007				
January	86,333,000	2,769	3,311.46	28,921.90
February	61,135,000	2,769	3,311.46	20,480.55
March	58,196,000	2,769	3,311.46	19,496.03
April	79,248,000	2,769	3,311.46	26,548.42
May	103,739,000	2,769	3,311.46	34,752.93
June	112,837,000	2,769	3,311.46	37,800.71
TOTAL	946,689,000		\$ 39,737.52	\$ 323,808.86

WAIMEA IRRIGATION SYSTEM FY 2007

Month	Water Sold (Gallons)	Acreage Served	Assessment Charges	Water Charges
LALAMILO SECTION				
2006				
July	34,355,000	284	747.50	12,367.80
August	45,792,000	284	747.50	16,485.12
September	49,520,000	284	747.50	17,827.20
October	32,525,000	284	747.50	11,709.00
November	21,610,000	284	747.50	7,779.60
December	29,807,000	284	747.50	10,730.52
2007				
January	24,777,000	284	747.50	8,919.72
February	25,625,000	284	747.50	9,225.00
March	53,000,000	284	747.50	19,080.00
April	16,336,000	284	747.50	5,880.96
May	34,911,000	284	747.50	12,567.96
June	32,961,000	284	747.50	11,865.96
Subtotal	401,219,000	—	\$ 8,970.00	\$ 144,438.84

HAWAIIAN HOMES

2006				
July	1,933,000	189	\$ 497.30	\$ 695.88
August	1,033,000	189	497.30	371.88
September	1,090,000	189	497.30	392.40
October	1,523,000	189	497.30	548.28
November	1,366,000	189	497.30	491.76
December	2,076,000	189	497.30	747.36
2007				
January	1,549,000	189	497.30	557.64
February	820,000	189	497.30	295.20
March	1,666,000	189	497.30	599.76
April	474,000	189	497.30	170.64
May	1,742,000	189	497.30	627.12
June	1,129,000	189	497.30	406.44
Subtotal	16,401,000	—	\$ 5,967.60	\$ 5,904.36

PUUKAPU SECTION

2006				
July	2,017,000	148	\$ 389.50	\$ 726.12
August	1,711,000	148	389.50	615.96
September	4,212,000	148	389.50	1,516.32
October	4,110,000	148	389.50	1,479.60
November	2,550,000	148	389.50	918.88
December	2,751,000	148	389.50	990.36
2007				
January	1,927,000	148	389.50	693.72
February	2,508,000	148	389.50	905.88
March	5,478,000	148	389.50	1,972.08
April	2,025,000	148	389.50	729.00
May	5,063,000	159	418.45	1,822.68
June	3,747,000	159	418.45	1,348.92
Subtotal	38,099,000		4,731.90	13,719.52
TOTAL	455,719,000		19,669.50	164,062.72



ANIMAL IMPORTATION AND INSPECTION FY 2007

Alligator	3
Alpaca	6
Bird (Caged)	3,866
Bird (Exotic)	16
Cat (Quarantine)	2,755
Cattle	211
Chickens/Gamecocks	2,731
Chicks (Day Old)	132,040
Chimpanzee	2
Chinchilla	37
Chukar (Day Old)	157
Dog (Service)	209
Dog (Service-Outer Island)	8
Dog (Military)	40
Dog (Dept of Homeland Security/Customs)	2
Dog (Quarantine)	6,444
Dog/Cat (Australia, New Zealand, British Isles, Guam)	1,897
Geese (Day Old)	180
Goat	4,402
Guinea Pig	27
Hamster	385
Horse	341
Llama	1
Mice	10,320
Monkey	1
Pheasant (Day Old)	4,745
Pigeon	864
Rabbit	104
Rat	160
Sheep	19
Sloth	1
Swine	14,484
Tortoise	169
Turtle	912

TOTAL 187,539

Hatching Eggs (30 dozen per case) 1,742 cs.
Direct Airport Release (Dogs/Cats)
(included in Quarantine count) 7,227
Direct Airport Release
(Dogs/Cats-Neighbor Island) 42

Refused Entry: 1 cat, 2 birds, 4 turtles

NON-COMPLIANCE: PRE & POST-SHIPMENT REQUIREMENTS FOR ANIMALS ENTERING THE STATE OF HAWAII

Investigations 61
Citations Issued 11
Written Warning Issued 194

Refused Entry: 1 cat, 2 birds, 4 turtles

DISEASE SURVEILLANCE TESTING FY 2007

Disease	Infected Herds	Livestock Tested	Negative	Suspect	Reactor	% Suspect/ Reactor
BRUCELLOSIS						
Swine						
Domestic	0	497	497	0	0	0.00
Transitional	1	90	89	0	1	01.11
Feral (wild)	1	47	45	0	2	04.26
Others	0	0	0	0	0	0.00
Cattle						
Domestic	0	8,909	8,909	0	0	0.00
Feral	0	0	0	0	0	0.00
Others*	0	28	28	0	0	0.00
BRT						
Dairy Herd	0	19	19	0	0	0.00
ANAPLASMOSIS						
Cattle						
Domestic	6	4,544	4,534	0	10	0.22
Feral	0	0	0	0	0	0.00
Others*	0	4	4	0	0	0.00
TUBERCULOSIS						
Cattle						
Domestic	0	2,812	2,812	0	0	0.00
Others*	0	15	15	0	0	0.00
PSEUDORABIES						
Swine						
Domestic	0	498	498	0	0	0.00
Transitional	1	90	89	0	1	01.11
Feral (wild) **	1	47	38	0	9	19.15
Others*	0	0	0	0	0	0.00

* Others include: Alpaca, Caprine, Elk,

** Each island's feral swine population considered as a herd

SPECIMEN EXAMINATIONS BY VETERINARY LAB FY 2007

Section	Test	Number of Specimens
Serology	Anaplasmosis	4,518
	Bluetongue	0
	Brucellosis	9,431
	Equine Inf. Anemia	682
	Johne's Disease	620
	Pseudorabies	638
Clinical Path	P/O	1,242
	Giardia	2,851
	Smear	47
	Hematology/Cyto	28
	Microfilaria detection	21
	Ecto-Parasite ID	25
	Others	8
Pathology	Necropsy	649
	Histopathology	683
	Rabies (DOH FRA)	17
	Bacteriology	40
Surveillance	Avian Influenza	143
	Newcastle Disease	39
	West Nile Virus	8
	Chr. Wasting Disease	0
	Scrapie	0
	Equine Herpesvirus	0
	Equine West Nile	2
TOTAL:		21,736



PESTICIDES BRANCH ACTIVITIES FY 2007

INSPECTIONS	NUMBER
Producer Establishment Inspections	17
Samples	8
Market Surveillance Inspections	40
Samples	55
Agricultural Use Inspections	105
Samples	44
Worker Protection Standard Inspections	19
USDA Recordkeeping Inspections	36
Non-Agricultural Use Inspections	125
Samples	34
Import Inspections	6
Samples	0
Restricted-Use Dealer Inspections	27
Certified Applicator Records	48
Experimental Use Permit Inspections	5
Complaints	
Received	55
Investigated	55
Episodes	0
Annual Use Purchase Permits Issued	0
Aerial Permits Issued	0
EDUCATION & CERTIFICATION ACTIVITIES	
Private Applicators	
New certificates	44
Renewals	29
Examinations	105
Replacement cards	7
Fees collected	\$3,620
Commercial Applicators	
New certificates	101
Renewals	98
Examinations	403
Replacement Cards	23
Fees collected	\$9,560
Consultative visits (w/o fee)	193
Continuing Education Credit	
Course Applications Review	205
Presentations (w/o fee)	39
RUP Dealers	
Examinations	26
Certificates	21
Fees Collected	\$390
Training Services for Fee	
Consultations, presentations & "emergency" quiz sessions	8
Fees Collected	\$350

REGISTRATION ACTIVITIES

Pesticides licensed	2,636
Fees collected	\$698,265
Dealer licenses issued	18
Fees collected	\$3,300
Special Local Need	
Registrations issued	9
Emergency Exemptions	0
Experimental-Use Permits	13

CHEMICAL ANALYSES LABORATORY ACTIVITIES

Feed samples tested for chemical contaminants	3
Regulatory samples to support Hawaii pesticide investigations	98
Regulatory samples analyzed to support EPA - Pacific Island pesticide investigations	0
Environmental samples to support pesticides research	115

PESTICIDES BRANCH ACTIVITIES FY 2007(cont.)

INSPECTIONS	NUMBER
ENFORCEMENT ACTIVITIES	
Warning Letters	42
Stop Sale Actions	0
Civil Complaints	17
Informal Settlement Meetings	10
Consent Agreements	8
Penalties Collected	\$5,600
Hearings Conducted	0

**NOXIOUS WEED CONTROL ACTIVITIES FY 2007
CHEMICAL/MECHANICAL CONTROL SECTION**

Number of plants treated with herbicide or removed mechanically:

	Island	Acres	
Fireweed	Kauai	0	*
	Oahu	0	*
	Maui	1,500	
Rubus niveus	Maui	2,000	
	Oahu	2	
Fountaingrass	Kauai	11	
	Oahu	392	
Thorny kiawe	Kauai	27,000	**
	Hawaii	1	
Gorse	Maui	500	
	Kauai	303	**
Miconia	Oahu	504	
Turkeyberry	Kauai	2,500	**
Arundo	Oahu	7	***
False kava	Oahu	273	***
Tetragium	Kauai	100	
Kudzu	Kauai	1	

* No new plants found during current fiscal year

** Plants found during surveys; performed cooperatively with Kauai Invasive Species Committee

*** Performed cooperatively with Oahu Invasive Species

**SEED REGULATORY ACTIVITIES FY 2007
CHEMICAL/MECHANICAL CONTROL SECTION**

Seed Importer Licenses Issued	45
Seed Importer Licenses Issued	44
Foreign Seed Lots Examined	69
Federal Seed Act - Rejections due to Prohibited Contaminants	1
Hawaii Seed Law - Seed Lots Germinating	
Germination Tests Performed	65
Lots testing Below Standard	0
Hawaii Seed Law-	
Seed Tests Performed on Request	18
Seed Vendor Inspections Performed	14
Number of pounds of seed removed from sale	886
Number of seed packages removed	235
Seed Regulatory Fees Collected	
Test on Request	\$80
Seed License Fees	\$1,100
Total Fees Collected	\$1,1800



PLANT PEST CONTROL ACTIVITIES FY 2007

BANANA BUNCHY TOP PROJECT

Oahu:

Number of mats tagged, commercial farms 3,150
 Number of mats tagged, residential 106

Hawaii:

Number of diseased mats rouged (Kona) 35
 Number of diseased mats rouged (East Hawaii) 198

Kauai:

Number of diseased mats tagged, commercial farms 100
 Number of mats destroyed, residential 87

Maui:

Number of mats tagged commercial farms 167
 Number of mats destroyed, residential 28

PAPAYA RINGSPOT VIRUS PROJECT

Oahu:

Number of diseased plants tagged 560

Kauai:

PRV free as of June 2006; Acres surveyed 1,000

Lanai:

Number of diseased plants tagged 50

CARIBBEAN FROG CONTROL

Oahu:

Number of Acres Treated with Citric Acid, estimated 15 *1
 Number of known Wild coqui Population Sites Treated 1 *1
 Number of frog calls received 86 *6
 Number of commercial nurseries assisted 1 *1

Maui:

Number of days 400 gallon sprayer loaned out 300 *5
 Number of days 100 gallon sprayer loaned out 365 *5
 Number of days 50 gallon sprayer loaned out 365 *3
 Number of frog calls received 15 *6

Kauai:

Number of acres treated with citric acid 114.5 *2
 Number of Known Wild Frog Population Sites Treated 1 *2
 Number of Frogs Caught by Hand 70 *2
 Number of frog calls received 3 *6

Hawaii:

Number of loans made for 100 gallon sprayer
 East Hawaii 77 *3
 West Hawaii 98 *3
 Number of Educational Outreaches Made 6 *3
 Number of Calls Received 120
 Number of Commercial Nurseries Assisted 12

LITTLE FIRE ANT

Kauai:

Number of Acres Infested 0.5 *4

Oahu:

Number of Properties Surveyed 10
 Number of Properties Infested 0

Kauai:

Number of Acres Infested 0.5
 Number of Properties Infested 2

Hawaii:

Number of New Nursery Sites Infested
 East Hawaii 3
 Number of Properties Surveyed
 East Hawaii 79
 West Hawaii 5
 Number of Sites Treated
 East Hawaii 27
 West Hawaii 0

NETTLE CATERPILLAR

Oahu:

Number of Sites Surveyed 17
 Number of Sites Infested and Treated 2

EDUCATION/OUTREACH

Kauai:

Number of Presentations 10
 (HDOA responsibilities, PPC programs)

Hawaii:

Number of Presentations 6
 (Coqui frog, BBTv, Nettle Caterpillar)

Oahu:

Number of Presentations 3
 (Coqui frog, BBTv, Noxious Weed Rules)

*1 Cooperative effort with HDOA, OISC, DLNR, U.S. Army Environmental Division (for wild population)

*2 Cooperative effort with HDOA, KISC

*3 Cooperative effort with HDOA, Maui Invasive Species Committee (MISC)

*4 Cooperative effort with HDOA, University of Hawaii, College of Tropical Agriculture & Human Resources, Cooperative Extension Service - Hilo

*5 Sprayer Loan Program; residents to purchase citric acid and borrow HDOA sprayer

*6 Majority of calls revealed green house frog, *Eleutherodactylus planirostris*



PLANT QUARANTINE IMPORT ACTIVITIES FY 2007

AIRPORTS AND HARBORS TOTAL

Ship & Aircraft Arrivals	38,574
Passengers	6,734,425
Baggage, Cargo, & Mail Inspected (parcels)	15,018,405
Treated & Released (parcels)	1,857
Safeguarded Material (parcels)	97
Refused Entry (parcels)	6,135
Destroyed Material (parcels)	5,584
Insect Interceptions	1,964
Insect Interceptions-confirmed not known in Hawaii	431
ROT Cargo Inspection	5,017,143
Violation Notices Issued	1,574
Import Permits Issued	892
Post Entry Inspections	1,224
Amnesty Bin (Items Deposited)	5,361
Amnesty Bin (Regulated Items Deposited)	20

PLANT QUARANTINE DETECTOR DOG PROGRAM

AIR TERMINAL TOTAL

Number of Flights Monitored	1,611
Number of Flights Monitored	1,737
Number of Passengers	344,354
Number of Baggage Inspected	8,347
Declared Materials Detected	1036
Undeclared Materials Detected	2,558
Regulated Materials Detected at Baggage (parcels)	119
Parcels Destroyed	16
Parcels Treated & Released	91
Parcels Safeguarded	0
Parcels Refused Entry	0

*Totals include baggage/parcels with residual odor of agricultural items

PLANT QUARANTINE BROWN TREESNAKE ACTIVITIES FY 2007

Commercial/Private Aircraft from Guam, Saipan, & northern Australia

Flights Inspected	643
Parcels Inspected	117,218
Equipment/Personal Vehicles Inspected	18

Military Aircraft from Guam, Saipan, & northern Australia

Flights Inspected	694
Parcels Inspected	253,875
Passengers Inspected	8982
Equipment/Personal Vehicles Inspected	130

Commercial/Private Ships from Guam

Ships Inspected	2
Parcels Inspected	7,725
Equipment/Personal Vehicles Inspected	25

Military Ships from Guam

Ships Inspected	0
Parcels Inspected	0
Equipment/Personal Vehicles Inspected	0

Brown Treesnake Educational Classes

Number of Classes/Displays	1
Number of People	750

PLANT QUARANTINE EXPORT ACTIVITIES FY 2007

PLANT INSPECTION OFFICE U.S. FOREIGN TOTAL

Horticultural Material Inspected & Certified at PIO (parcels)	123,796	3,811	127,607
Horticultural Material Treated & Certified at PIO (parcels)	2,082	72	2,154
Phytosanitary Certificates Issued	1,819	374	2,193

NURSERY CERTIFICATIONS

New Certifications	7
Nursery Inspections	449
Nursery Certification Suspended	4
Nursery Certification Terminated	12
Plants Exported	2,595,061

BURROWING NEMATODE LABORATORY ACTIVITIES

Lots of Plant Material Accepted	226
Test Samples Prepared	2,925
Parcels Certified	3
Samples Rejected	9

DISINFESTATION TREATMENT

Treatments	93
Parcels Treated & Certified	214

PLANT QUARANTINE INTER-ISLAND ACTIVITIES FY 2007

Ship, Barge Arrival & Departures Monitored	602
Aircraft Arrival & Departures Monitored	2,785
Baggage & Cargo Inspected (parcels)	208,446
Restricted Material Rejected (parcels)	43
Restricted Material Treated (parcels)	802

PLANT QUARANTINE REVENUES FY 2007

Treatment Fees	\$1,863.80
Burrowing Nematode Laboratory Test Fees	\$1,150.00
Nursery Certification Fees	\$21,011.00
Quarantine House Rental Fees	\$472.50
Permit Fees	\$12,278.00
Site Inspection Fees	\$792.01
Office Misc.	\$0
Phytosanitary Fees	\$4,665.00
TOTAL REVENUE	\$42,232.31

PLANT QUARANTINE CITATIONS AND SUMMONS

Citations Issued	15
Bail Forfeiture	\$6,100

PLANT QUARANTINE EDUCATIONAL ACTIVITIES

Talks and Tours of Plant Quarantine Station	20
Individuals Receiving Talks and Tours	1,928



**QUALITY ASSURANCE DIVISION
COMMODITIES BRANCH ACTIVITIES FY 2007**

CERTIFICATION SERVICE ACTIVITIES

FFV Certification (1000 lb)	12,562
FFV quality certificates issued	671
Fees assessed	\$87,343
Papaya letter reports / identity preservation pounds checked (1000 lb)	728
Fees assessed	\$44,039
Egg Quality certification (cases)	82,904
Fees assessed	\$88,988
Processed Foods Certification	
Canned pineapple certified (1000 cs)	701
Fees assessed	\$125,308
Seafood inspection visits	8
Federal reimbursement	\$1,701
Coffee certification, green (1000 lb)	5,331
Fees assessed	\$111,467
Other products, certificates issued	9
Fees assessed	\$995
Meat Grading (Carcasses)	0
Fees assessed	\$0
Seed Certification (Fields)	798
Total Acres	3,244
Pounds Harvested (1000 lb)	4,869
Fees assessed	\$231,552

EGG PRODUCTS INSPECTION ACT SURVEILLANCE

Visits	49
Federal reimbursement	\$11,240

COMMERCIAL FEED INSPECTION

Labeling enforcement (lots)	0
Store visits	0
Feed tonnage reported (tons)	61,961
Fees assessed	\$21,576
Samples submitted for guarantee analysis	0
Samples analyzed for guarantee by UH/ADSC	0
Samples submitted for adulteration analysis	0
Penalty fees assessed	\$0
Registration fees assessed	\$1,710

DEALER LICENSING

Licenses issued	853
Fees collected	\$13,182

SHELL EGG INSPECTION

Origin stamp, imports (cases)	524,096
Retail grade enforcement (dozen)	50,086
Store visits	238

FRESH FRUITS AND VEGETABLES

Wholesale grade enforcement (1000 lb)	173
Retail grade enforcements (lots)	20,975
Store visits	237
Minimum export requirements (1000 lb)	1,762
Advertising: Number inspected	13,678

FOOD SAFETY

No. of Audits	10
Fees assessed	\$2,941

TOTAL FEES ASSESSED \$742,042

**MEASUREMENT STANDARDS BRANCH ACTIVITIES
FY 2007**

STANDARDS AND TECHNICAL SERVICES

Metrology

Mass standards calibrated	
Laboratory test standards	174
Enforcement standards	518
Field standards	560
Total units tested	1,352
Volumetric standards calibrated	
Laboratory test standards	1
Enforcement standards	16
Field standards	15
Total units tested	32

STANDARDS AND TRADE PRACTICES ENFORCEMENT

Devices

Small capacity weighing devices (>500 LBS)	
Number registered	5,773
Total tests	1,343
Compliance rate (percent)	86
Medium capacity weighing devices (>500 LBS & <9000 LBS)	
Number registered	707
Total tests	81
Compliance rate (percent)	75
Large capacity weighing devices (>9000 LBS)	258
Total tests	0
Compliance rate (percent)	NA

Gasoline pumps

Number registered	7,050
Total tests	1,349
Compliance rate (percent)	86

Taxi meters, Number registered 2,447

Total tests	2,198
Compliance rate (percent)	90

Other linear measuring devices, Number registered 211

Total tests	41
Compliance rate (percent)	100

Revenue from device registration

\$165,845	
Licensed Measure masters	211
Revenue from licensing Measure masters	\$18,725

Odometer tampering complaints investigated

6	
Octane tests performed	137

Packages inspected for content (thousands)

48	
Lots inspected	66
Compliance rate (percent)	99

Package labels inspected

1,019	
Compliance rate (percent)	100

Labels submitted for review

126	
Acceptance rate (percent)	24

Price verification

Number of stores visited to identify businesses subject to price verification inspection	4
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Number of stores added to list of businesses subject to price verification inspection	4
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Number of store inspections	19
Total items audited	1,700

Percentage of stores meeting minimum compliance rate

(<2% overcharges)	100
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Packaging and labeling complaints received and resolved

4	
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(Note: Received 7 / Resolved 5)

STATISTICS OF HAWAII AGRICULTURE 2006

January 2008

A Partnership Between the



Hawaii
Department of Agriculture
Agricultural Development Division

United States
Department of Agriculture
National Agricultural Statistics Service



USDA, NASS, HAWAII FIELD OFFICE

"Fact Finders for Hawaii Agriculture"



United States Department of Agriculture - National Agricultural Statistics Service
In cooperation with Hawaii Department of Agriculture - Agricultural Development Division

A MESSAGE FROM THE STATE DIRECTOR

The primary information source for this publication is agricultural producers. We truly are thankful and appreciate the cooperation they extend when we contact them for information. Also, we are aware and sensitive to the frequent contacts made to producers throughout Hawaii. Many options are available for producers to respond including responding by mail, facsimile, the Internet (for certain selected surveys), by phone, and personal interviews. The vast majority of producers understand that farmers and ranchers are the very best source, often the only source, for the information required to meet specific data needs and publication results. We truly appreciate and thank all the agricultural producers and organizations who have so willingly and faithfully provided survey information.

A very important component of our data collection efforts is performed by our National Association of State Departments of Agriculture (NASDA) enumerators. Their efforts are very worthy of special recognition for their important and significant contributions.

The uses of this information are many, but often the data is needed for developing marketing strategies, obtaining farm loans, writing business plans, testifying before local or state governing bodies, justifying claims for disaster relief, and evaluating and developing risk aversion plans. The direct value of this data is not always transparent to the producer, but reliable numbers are needed for business and policy decisions. Supplemental information is provided by grower organizations and agribusiness firms. Without their vital cooperation and support on the many surveys conducted throughout the year, these reports would not be possible.

Our office will be involved in collecting, processing, analyzing, and publishing the 2007 Census of Agriculture which is conducted every 5 years by our agency. The Census of Agriculture serves as a benchmark to our estimation program for crop acreage and livestock inventories. Also, the economic data collected is very important to measure the economic standing of farms and ranches in Hawaii and other states. The Census of Agriculture also provides demographic information which is critical for outreach planning by many private and public organizations. Thank you all in advance for responding to this important project. This is an opportunity for all producers' voices to be heard regarding agriculture in Hawaii.

Our website, http://www.nass.usda.gov/Statistics_by_State/Hawaii/index.asp, contains all the data published by our office. The site contains this publication in electronic format along with other numerous commodity releases issued throughout the year.

Thank you,

Mark E. Hudson
Director, USDA NASS Hawaii Field Office





USDA, NASS, HAWAII FIELD OFFICE

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A Partnership Between the



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The National Association of State Departments of Agriculture (NASDA) is a nonprofit, nonpolitical organization comprised of the 50 State Departments of Agriculture. NASDA and USDA-NASS have a cooperative agreement for NASDA to employ enumerators in the collection of agricultural statistics.

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2006 Farm Revenues down Slightly from Previous Year

Farm level revenues for 2006 totaled \$582.1 million compared to the revised 2005 level of \$582.8 million. Compared to the previous year, 7 of the 20 ranked commodities were higher including seed crops, cattle, tomatoes, bananas, potted palms, anthuriums, and sweetpotatoes.

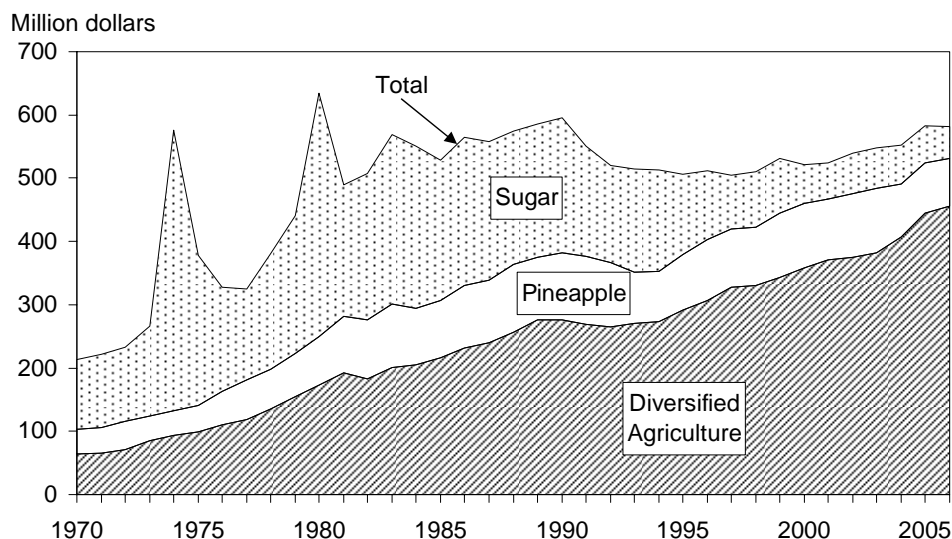
The value of diversified agriculture rose by 3 percent from 2005. Record high levels were set for seed crops and sweetpotatoes. Corn acreage on the national level has risen in response to the emerging ethanol industry. This acreage rise has increased the demand for seed. Other diversified agriculture commodities showing gains included vegetable & melons (which includes ginger root and herbs), cattle, and all fruit (excluding pineapple). Revenue declines for 2006 included flowers and nursery products, macadamia nuts, coffee, aquaculture, milk,

eggs, and hogs. Lower production and prices along with six weeks of statewide rainfall from late February through March contributed to the revenue decline for these commodities.

The equivalent farm value for pineapples (this does not include the processed value added by processing) decreased to \$75.5 million, 5 percent below the 2005 levels. Pineapple value of production was lower, mainly due to lower production. A large operation publicly announced they were completely shutting down all harvesting and other operational activities in November 2006.

The equivalent value of sugarcane (this does not include the processed value of raw sugar) was set at \$50.2 million, down 15 percent from 2005. Sugar value has dropped seven of the last ten years.

**Cash Receipts of Agricultural Commodities,
State of Hawaii, 1970-2006**





Dry Weather Dominates 2006 Except for First Quarter

Dry weather across the State prevailed during most of 2006 with over half of the rainfall coming in the months of February, March, and October. Seven of the fourteen stations with complete rainfall records for the year reported above normal rainfall. Sporadic rainfall across the State brought some relief to the persistent drought conditions. Crop conditions varied with the lower precipitation. Dry conditions allowed for more fieldwork and increased the need for irrigation.

January-March

January was mostly dry with only the Hilo station reporting above normal rainfall. Brisk trade winds and cool temperatures were reported much of the month. Rainfall picked up in February with a heavy, almost continuous, rain event that carried on into March. Seven of the reporting stations reported above normal rainfall in February and twelve had above normal rainfall in March. Rains were often heavy during this period with widespread flooding and crop damage. Strong winds and cool temperatures prevailed during this period. The heavy rainfall during February through March filled reservoirs and saturated top soil across the State.

April-June

Drier weather prevailed in early April. Moderate trade winds with mostly sunny conditions dominated. Favorable weather conditions continued through the rest of the month. Most locations were dry with some isolated showers and moderate trade winds. None of the primary weather stations reported above

normal rainfall for April. Early May saw some heavy rain on the Big Island, but the rest of the State remained relatively dry. Mid-May saw warm, dry conditions with moderate trade winds across the islands. Mostly warm, sunny conditions with isolated showers and light winds occurred at the end of May. Seven of the stations reported above normal rainfall for the month of May. June weather began with warm and dry conditions with isolated showers in windward and mountain areas. Some areas received moderate rainfall while others were primarily sunny, warm, and dry. None of the sixteen weather stations recorded above average rainfall for June.

July-September

Warm and dry with light showers in windward and mountain areas was the prevailing weather condition in early July. Warm temperatures, gusty winds, and dry conditions prevailed in mid-July. Mostly dry, sunny conditions prevailed at the end of July. Hurricane David passed south of the islands in late July, which disrupted the trade winds and dropped some light showers. One station reported above normal rainfall in July. Tropical Storm Fabio passed north of the islands in early August, bringing passing showers to several areas. Moderate trade winds with sunny, dry conditions dominated in mid-August. Isolated showers were limited to windward and mountain areas. August finished with warm, dry conditions, sunshine, and light winds. Only two stations reported above normal rainfall for August. Moderate rainfall fell on the Big

Island in early September while the rest of the State had warm temperatures and dry conditions. Mid-September was mixed with mostly dry, sunny conditions and isolated showers. September ended with continued warm temperatures and isolated precipitation. Five of the sixteen weather stations experienced above normal rainfall in September and none had above normal rainfall for the third quarter.

October-December

Light winds, warm temperatures, cloud cover, and scattered precipitation prevailed in early October. Favorable weather conditions prevailed in mid-October, but a 6.6 magnitude earthquake shook the State causing some structural damage to buildings, bridges, and water causeways. Intermittent wet weather came in late October with heavy rainfall in many areas. Crop and pasture conditions improved in many areas due to the precipitation, but flooding and excess moisture were a problem in others. Ten of the stations reported above normal rainfall for October. November started with favorable temperatures and dry conditions across most of the State. Variable weather prevailed in mid-November with warm, dry conditions at the end of the month. Two stations had above normal rainfall in November. December started out with sunny skies and scattered showers. Cool and dry conditions prevailed in mid-December. Late December saw continued dry conditions and light winds. None of the sixteen weather stations reported above normal rainfall for December.


WEATHER: Precipitation, selected stations, State of Hawaii, 2006

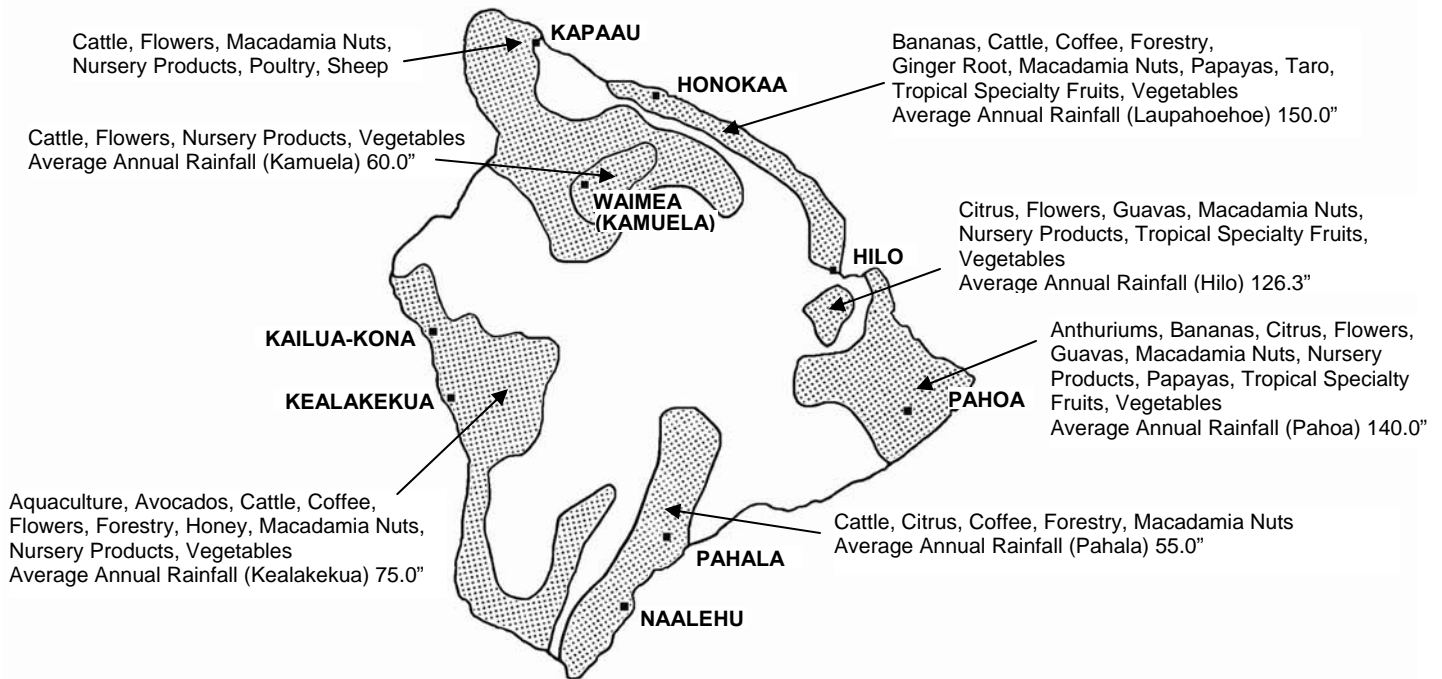
STATIONS	Year & normal	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	% Annual normal
HAWAII COUNTY															
Hilo International Airport	Normal	9.7	8.9	14.4	12.5	8.1	7.4	10.7	9.8	9.1	9.6	15.6	10.5	126.3	
	2006	11.43	8.46	26.41	8.69	22.51	4.19	7.83	5.69	9.52	7.43	3.21	6.66	122.03	96.6
Kamuela (HI86)	Normal	6.6	6.0	7.9	6.9	4.0	2.2	3.7	4.1	2.2	3.3	5.8	7.3	60.0	
	2006	3.94	6.17	2.31	3.96	7.29	1.74	5.00	2.41	2.34	3.03	3.58	1.26	43.03	71.7
Kealahou (HI84)	Normal	4.7	3.4	5.6	6.2	7.7	8.2	8.7	8.3	8.2	6.2	4.4	3.4	75.0	
	2006	.72	.69	6.59	1.57	4.38	2.61	3.39	6.81	1.41	7.08	.75	.21	36.21	48.3
Laupahoehoe (HI80)	Normal	13.5	13.2	19.5	18.9	11.7	6.2	10.0	12.4	6.9	9.3	13.6	14.8	150.0	
	2006	9.10	11.92	17.11	8.81	21.25	4.11	8.51	7.51	6.95	6.17	2.89	5.58	109.91	73.3
Pahala (HI85)	Normal	7.7	6.1	6.3	5.0	3.8	2.2	2.1	3.3	3.4	4.2	5.5	5.4	55.0	
	2006	6.98	1.68	31.01	.18	M	.13	.79	1.65	3.46	14.83	3.43	.87	--	--
Pahoa (HI83)	Normal	13.9	10.9	14.7	13.9	10.5	7.1	9.8	10.6	9.2	11.5	13.3	14.6	140.0	
	2006	11.52	8.08	24.61	10.37	20.04	6.01	9.67	7.49	8.38	31.21	4.49	10.40	152.27	108.8
HONOLULU COUNTY															
Kahuku (HI09)	Normal	6.3	4.2	5.3	4.0	2.5	1.8	2.2	2.6	2.2	4.0	4.6	5.3	45.0	
	2006	2.64	5.79	29.18	3.09	1.12	.89	.87	1.42	1.47	5.90	3.30	2.37	58.04	129.0
Waianae (HI17)	Normal	3.8	2.3	2.5	1.6	.7	.3	.3	.7	.7	1.8	2.0	3.3	20.0	
	2006	1.90	1.41	15.22	.20	.11	0	.01	.06	.18	4.26	1.51	.06	24.92	124.6
Waimanalo (HI13)	Normal	6.8	4.6	3.6	3.2	3.2	1.5	1.6	1.5	2.0	3.7	5.6	5.5	42.8	
	2006	2.81	8.21	24.35	.70	.97	.32	.85	.46	.94	4.02	5.46	1.54	50.63	118.3
KAUAI COUNTY															
Anahola (HI48)	Normal	6.8	4.4	6.0	4.6	3.2	1.6	2.5	2.5	2.0	5.1	5.4	5.9	50.0	
	2006	M	10.66	M	M	1.09	1.22	2.49	2.66	1.14	2.06	2.52	1.55	--	--
Hanalei (HI45)	Normal	11.8	9.4	13.4	12.2	9.3	6.5	9.8	8.7	6.9	8.5	10.2	12.0	118.7	
	2006	8.59	15.83	28.82	11.57	5.11	2.04	2.95	8.32	7.90	2.58	5.76	2.96	102.43	86.3
Omao (HI51)	Normal	6.9	4.5	5.5	5.2	4.2	3.4	4.7	4.6	3.7	4.7	5.9	6.7	60.0	
	2006	6.73	6.07	35.08	2.78	2.94	.93	1.05	6.78	2.09	3.75	4.69	1.29	74.18	123.6
MAUI COUNTY															
Hana (HI61)	Normal	8.5	5.7	9.1	7.5	5.9	4.1	5.9	5.8	6.1	7.3	8.0	6.1	80.0	
	2006	4.11	11.12	7.71	5.94	4.03	.92	2.47	4.27	3.42	10.97	6.50	3.30	64.76	81.0
Kula (HI65)	Normal	3.5	3.0	2.5	1.6	1.1	.8	.8	.8	1.1	1.5	2.3	3.3	22.3	
	2006	1.44	2.88	11.02	.38	1.96	.23	.04	.06	.80	9.23	1.56	.58	30.18	135.3
Wailuku (HI66)	Normal	5.2	3.8	3.6	3.0	1.2	.4	.6	.7	.6	1.7	2.9	4.3	28.0	
	2006	.88	2.33	9.06	.61	1.94	.05	.26	.21	.44	5.92	4.49	3.05	29.24	104.4
Molokai Airport	Normal	4.3	3.2	3.7	2.2	1.0	.5	.7	.7	.7	1.9	2.8	4.0	25.7	
	2006	.32	1.24	8.16	.46	.20	.03	.34	.07	.59	3.40	4.70	.94	20.45	79.6

-- = No record. Data not recorded.

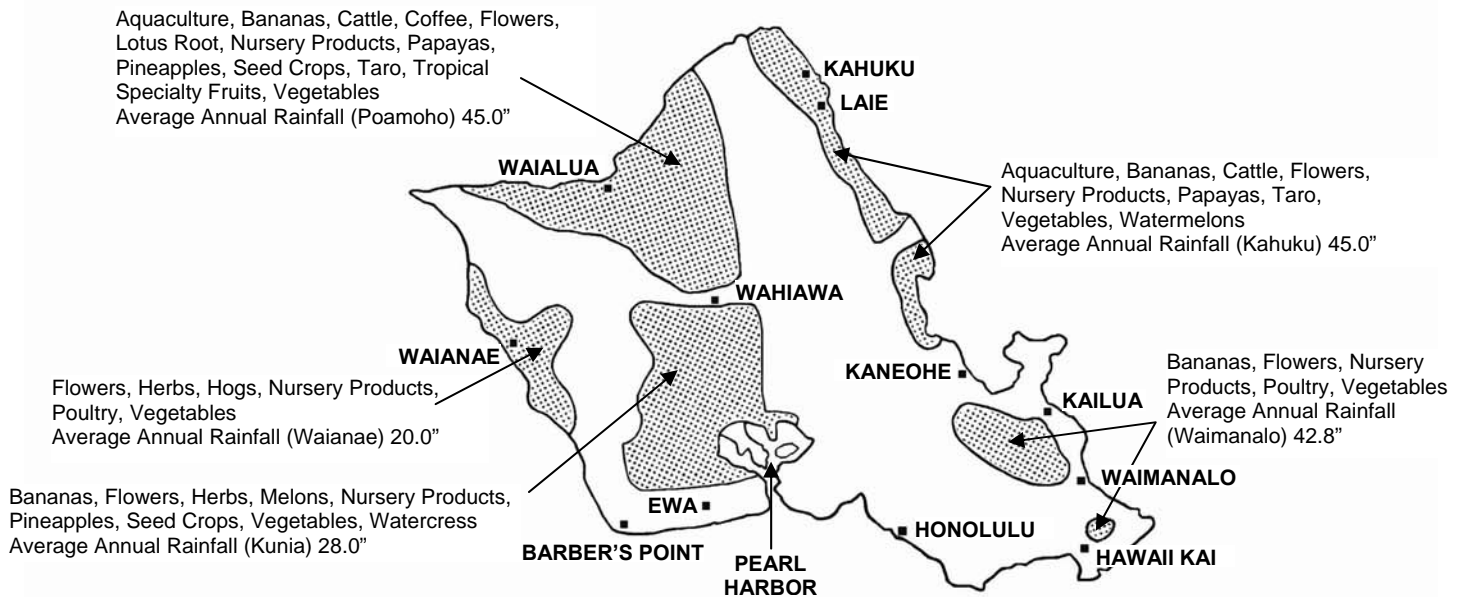
Source: U. S. Department of Commerce, National Oceanic and Atmospheric Administration. Most rainfall stations were selected from the National Weather Service's hydronet system of automated gauges, and those data have not been quality controlled to date, and therefore are not certified by the National Weather Service.

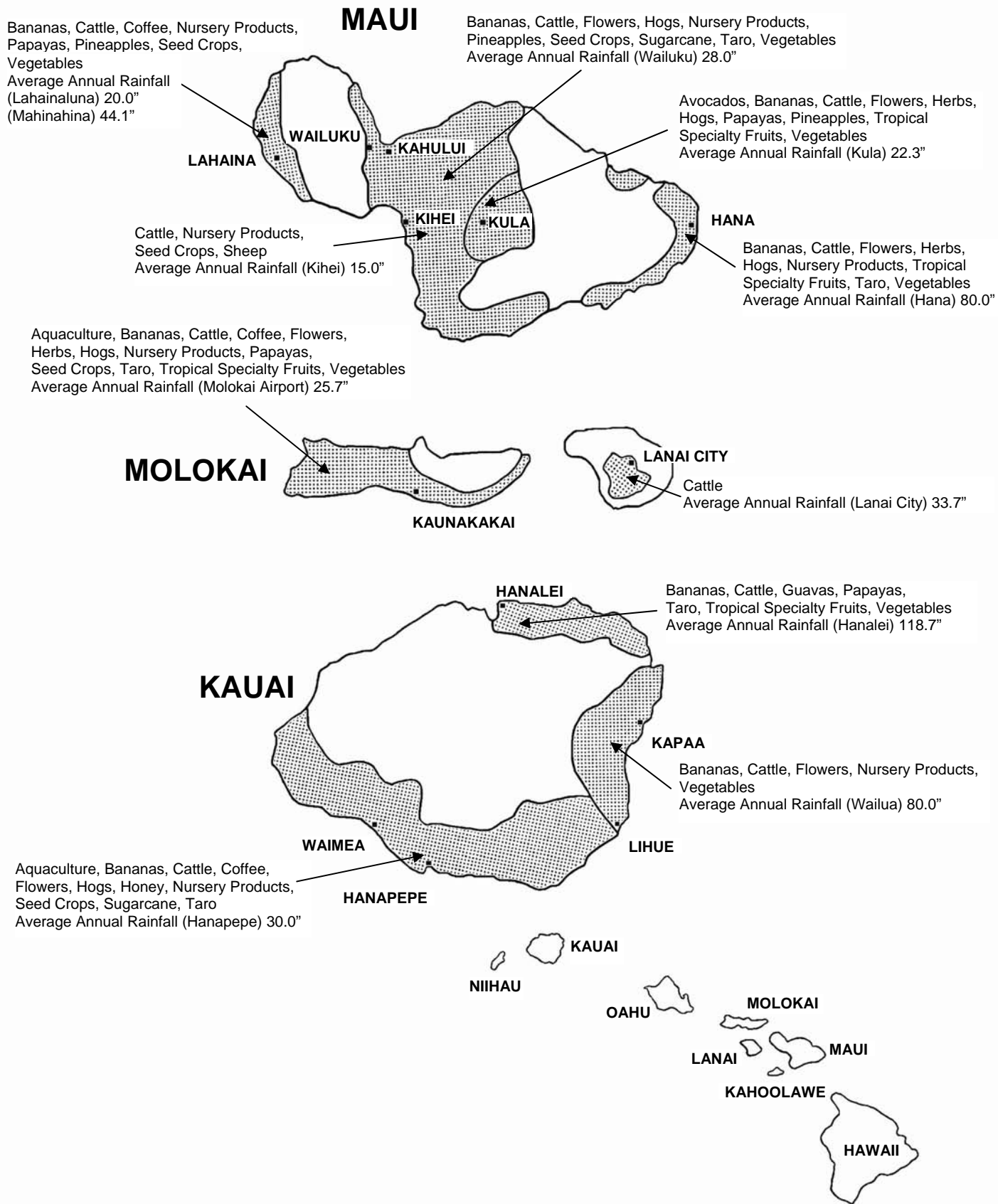
MAJOR AGRICULTURAL AREAS, STATE OF HAWAII, 2006

HAWAII



OAHU







SUMMARIES

Top 20 commodities, State of Hawaii, 2005-2006

Commodity ¹	Rank		Value of production	
	2005	2006	2005	2006
	--- Number ---		--- 1,000 dollars ---	
Seed crops	2	1	77,330	97,580
Pineapples (fresh equivalent)	1	2	79,288	75,542
Sugarcane (unprocessed)	3	3	58,900	50,200
Macadamia nuts	4	4	43,740	38,860
Coffee	5	5	37,310	37,000
Cattle	6	6	22,548	26,452
Milk	7	7	18,387	14,508
Algae	8	8	14,637	11,914
Tomatoes	10	9	9,798	11,319
Papayas	9	10	11,241	11,049
Bananas	11	11	9,175	9,800
Palms, potted	13	12	8,135	8,309
Eggs	12	13	8,979	8,192
Dendrobiums, potted	15	14	6,056	5,768
Dracaena, potted	14	15	7,030	5,590
Anthuriums, cut	17	16	5,101	5,459
Basil	16	17	5,595	5,320
Sweetpotatoes	20	18	3,843	4,440
Hogs	18	19	4,553	4,158
Ginger root	19	20	4,080	3,010

¹ Floriculture categories include only growers with total sales of \$10,000 or more.

Farm values, State of Hawaii, 1987-2006

Year	Sugar (unprocessed cane)	Pineapples (fresh equivalent)	Diversified agriculture ¹	Total
	1,000 dollars			
1987	218,000	99,286	240,012	557,298
1988	209,900	107,402	256,660	573,962
1989	210,300	98,310	276,438	585,048
1990	213,800	106,365	275,789	595,954
1991	174,900	107,775	268,707	551,382
1992	153,700	102,100	264,427	520,227
1993	163,000	79,850	271,094	513,944
1994	160,100	78,890	273,826	512,816
1995	127,700	87,360	291,632	506,692
1996	108,100	95,914	307,329	511,343
1997	85,500	91,721	327,484	504,705
1998	87,300	92,776	329,886	509,962
1999	86,800	101,448	342,846	531,094
2000	62,200	101,530	358,170	521,900
2001	57,800	96,337	370,241	524,378
2002	64,300	100,616	374,602	539,518
2003	64,400	101,470	382,253	548,123
2004	61,500	83,104	407,453	552,057
2005	58,900	79,288	444,597	582,785
2006	50,200	75,542	456,342	582,084

¹ Aquaculture included beginning 1993.

Diversified agriculture ranked by value, State of Hawaii, 2005-2006

Commodity	Rank		Value of production			Percent of diversified agriculture	
	2005	2006	2005	2006	Year-to-year percent change	2005	2006
	--- Number ---		---- 1,000 dollars ----		----- Percent -----		
Flowers and nursery products	1	1	100,962	100,689	0	22.7	22.1
Seed crops	2	2	77,330	97,580	+26	17.4	21.4
Vegetables and melons ¹	3	3	67,717	73,038	+8	15.2	16.0
Macadamia nuts	4	4	43,740	38,860	-11	9.9	8.5
Coffee	5	5	37,310	37,000	-1	8.4	8.1
Cattle	8	6	22,548	26,452	+17	5.1	5.8
Fruits (excluding pineapples)	7	7	25,747	26,138	+2	5.8	5.7
Aquaculture	6	8	28,398	21,257	-25	6.4	4.7
Milk	9	9	18,387	14,508	-21	4.1	3.2
Eggs	10	10	8,979	8,192	-9	2.0	1.8
Hogs	11	11	4,553	4,158	-9	1.0	.9
Other livestock and crops			8,926	8,470	-5	2.0	1.8
Total			444,597	456,342	+3	100.0	100.0

¹ Includes ginger root and herbs.



SUMMARY: Acreage in crop and total farm acreage, by county, 2002-2006

Year	Sugarcane	Pineapples ¹	Vegetables and melons ^{2 3}	Fruits (excluding pineapples)	Coffee	Macadamia nuts	All other crops ⁴	Total farm acreage ⁵
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1,000 acres

State ⁶

2002	47.5	19.1	6.8	6.6	7.2	18.0	⁷ 8.8	1,320
2003	47.8	16.0	6.4	6.4	7.3	18.0	9.3	1,300
2004	43.0	13.0	6.7	6.0	7.7	18.0	9.4	1,300
2005	40.1	14.0	6.3	6.2	7.9	18.3	9.2	1,300
2006	42.1	13.9	5.5	5.8	8.2	17.0	9.7	1,300

County:

Hawaii

2002	0	*	1.8	4.3	3.5	⁸	⁷ 2.5	830
2003	0	*	1.6	4.1	3.6	⁸	2.9	820
2004	0	*	1.7	3.8	3.8	⁸	3.0	820
2005	0	*	1.6	4.1	3.8	⁸	2.7	820
2006	0	*	1.1	3.6	3.8	8	2.9	820

Honolulu

2002	0	10.0	3.6	1.1	⁸	⁸	⁷ 2.8	70
2003	0	10.1	3.4	1.0	⁸	⁸	2.8	70
2004	0	7.5	3.8	.8	⁸	⁸	3.0	70
2005	0	⁸	3.5	.8	⁸	⁸	2.6	70
2006	0	8	3.5	.8	8	8	2.4	70

Kauai

2002	10.8	*	.3	.8	⁸	⁸	⁷ 1.8	160
2003	11.1	*	.3	.8	⁸	⁸	1.7	150
2004	8.2	*	.3	.9	⁸	⁸	1.7	150
2005	7.1	*	.2	.8	⁸	⁸	1.7	150
2006	7.2	*	.1	.8	8	8	1.9	150

Maui

2002	36.7	9.1	1.1	.4	⁸	⁸	⁷ 1.7	260
2003	36.7	5.9	1.1	.5	⁸	⁸	1.9	260
2004	34.8	5.5	.9	.5	⁸	⁸	1.7	260
2005	33.0	⁸	1.0	.5	⁸	⁸	2.2	260
2006	34.9	8	.8	.6	8	8	2.5	260

* Less than 50 acres

¹ Land used for pineapple.

² Harvested acreage.

³ Includes ginger root.

⁴ Includes taro, seed crops, feed and forage crops (excluding pineapple feed products), flowers, nursery products, noni, kava ('awa), and others.

⁵ Includes land not in crop and pasture such as farm house lots, roads, woodlots, etc.

⁶ Sum of county estimates may not add to State total due to rounding.

⁷ Revised.

⁸ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.



SUMMARIES

SUMMARY: Number of crop farms, by county, 2002-2006

Year	Sugarcane	Pineapples ¹	Vegetables and melons ²	Fruits (excluding pineapples)	Coffee	Macadamia nuts	Taro	Flowers and nursery products
State								
2002	2	25	600	1,099	710	650	150	870
2003	2	25	570	1,426	715	650	150	865
2004	2	30	620	1,290	750	650	130	920
2005	2	30	600	1,265	790	650	110	955
2006	2	30	610	1,245	820	650	110	930
County:								
Hawaii								
2002	0	11	270	593	680	³	50	420
2003	0	11	230	746	690	³	40	395
2004	0	15	253	687	710	³	30	425
2005	0	³	215	664	745	³	30	425
2006	0	³	226	668	775	³	30	410
Honolulu								
2002	0	2	175	149	³	³	10	230
2003	0	2	190	179	³	³	15	230
2004	0	2	188	147	³	³	10	235
2005	0	³	213	159	³	³	10	265
2006	0	³	215	153	³	³	10	250
Kauai								
2002	1	7	55	153	³	³	65	65
2003	1	7	55	216	³	³	70	80
2004	1	8	72	196	³	³	65	80
2005	1	³	65	184	³	³	50	80
2006	1	³	63	174	³	³	50	75
Maui								
2002	1	5	100	204	³	³	25	155
2003	1	5	95	285	³	³	25	160
2004	1	5	107	260	³	³	25	180
2005	1	³	107	258	³	³	20	185
2006	1	³	106	250	³	³	20	195

¹ Includes specialty pineapple.

² Includes ginger root, herbs, noni, kava ('awa), and others.

³ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.


SUMMARY: Number of livestock operations and total number of farms, by county, 2002-2006

Year	Cattle ¹	Hogs	Milk	Eggs	Honey	Total (non-duplicated) ²
State						
2002	750	210	30	80	30	5,500
2003	750	210	30	80	29	5,500
2004	800	250	30	80	31	5,500
2005	800	230	30	80	34	5,500
2006	800	230	30	80	35	5,500
County:						
Hawaii						
2002	440	60	14	37	16	3,250
2003	440	60	14	37	14	3,250
2004	470	70	14	37	16	3,250
2005	470	70	14	37	20	3,250
2006	470	70	14	37	17	3,250
Honolulu						
2002	50	70	6	15	³	800
2003	50	70	6	15	³	800
2004	50	80	6	15	³	800
2005	50	70	6	15	³	800
2006	50	70	6	15	³	800
Kauai						
2002	120	30	4	8	³ 14	600
2003	120	30	4	8	³ 15	600
2004	120	40	4	8	³ 15	600
2005	120	30	4	8	³ 14	600
2006	120	30	4	8	³ 18	600
Maui						
2002	140	50	6	20	³	850
2003	140	50	6	20	³	850
2004	160	60	6	20	³	850
2005	160	60	6	20	³	850
2006	160	60	6	20	³	850

¹ Includes beef, dairy, and dairy replacement operations.

² Based on farm definition of \$1,000 or more of agricultural sales.

³ Honolulu and Maui combined with Kauai to avoid disclosure of individual operations.



SUMMARIES

SUMMARY: Value of crop sales, by county, 2002-2006

Year	Sugar (unprocessed cane)	Pineapples (fresh equivalent)	Vegetables, ginger root, herbs, and melons ¹	Fruits (excluding pineapples)	Coffee (parchment)
------	--------------------------------	-------------------------------------	--	-------------------------------------	-----------------------

1,000 dollars

State ⁴

2002	64,300	100,616	61,659	25,267	23,250
2003	64,400	101,470	64,173	26,819	24,070
2004	61,500	83,104	67,892	24,533	19,880
2005	58,900	79,288	67,717	25,747	37,310
2006	50,200	75,542	73,038	26,138	37,000

County:

Hawaii

2002	0	⁵	13,823	17,792	15,990
2003	0	⁵	14,235	19,881	15,200
2004	0	⁵	18,859	18,504	14,880
2005	0	⁵	18,172	18,353	31,030
2006	0	⁵	18,630	17,921	25,600

Honolulu

2002	0	70,992	36,533	3,750	⁵
2003	0	71,029	⁶ 37,214	3,748	⁵
2004	0	54,704	37,661	2,791	⁵
2005	0	⁵	38,725	3,715	⁵
2006	0	⁵	41,812	4,634	⁵

Kauai

2002	13,000	⁵	1,659	2,455	⁵
2003	13,500	⁵	2,495	1,739	⁵
2004	15,300	⁵	1,740	1,922	⁵
2005	14,700	⁵	1,670	1,641	⁵
2006	9,500	⁵	1,543	1,688	⁵

Maui

2002	51,300	29,624	9,644	1,270	⁵
2003	50,900	30,441	10,229	1,451	⁵
2004	46,200	28,400	9,632	1,316	⁵
2005	44,200	⁵	9,150	2,038	⁵
2006	40,700	⁵	11,053	1,895	⁵

See footnotes at end of table.

Continued


SUMMARY: Value of crop sales, by county, 2002-2006 -- Continued

Year	Macadamia nuts (in-shell)	Taro	Seed crops	Flowers and nursery products ²	Total crops ³
<i>1,000 dollars</i>					
State⁴					
2002	30,210	3,294	48,145	95,715	453,400
2003	32,330	2,700	49,160	95,601	461,680
2004	41,245	2,808	62,600	95,178	459,702
2005	43,740	2,322	77,330	100,962	493,991
2006	38,860	2,565	97,580	100,689	502,181
County:					
Hawaii					
2002	5	415	5	49,870	128,426
2003	5	335	5	50,206	132,331
2004	5	288	5	50,414	143,972
2005	5	168	5	53,449	164,772
2006	5	180	5	51,945	153,057
Honolulu					
2002	5	5	5	32,106	153,725
2003	5	5	5	31,092	⁶ 154,229
2004	5	5	5	32,173	138,878
2005	5	5	5	32,399	133,918
2006	5	5	5	33,524	135,550
Kauai					
2002	5	2,189	5	2,633	40,854
2003	5	1,760	5	3,067	47,077
2004	5	2,079	5	3,056	47,652
2005	5	1,643	5	3,204	49,318
2006	5	1,815	5	2,944	57,551
Maui					
2002	5	5	5	11,106	130,395
2003	5	5	5	11,236	128,043
2004	5	5	5	9,535	129,200
2005	5	5	5	11,910	145,983
2006	5	5	5	12,276	156,023

¹ Includes noni, kava ('awa), and others.

² Flowers, foliage, and nursery products.

³ Total crop values shown for individual counties are actual. Sum of individual commodities may not add to total. Forage crops' and forest product's value combined and included in total crop value.

⁴ Sum of county estimates may not add to State total due to rounding.

⁵ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

⁶ Revised.



SUMMARIES

SUMMARY: Value of livestock sales, total value of crop, livestock sales, aquaculture, and government payments, by counties, 2002-2006

Year	Cattle ¹	Hogs ¹	Milk	Eggs	Aquaculture	Total livestock and aquaculture ²	Total crops, livestock, and aquaculture	Government payments ³
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1,000 dollars

State ⁴

2002	18,326	4,788	22,467	8,854	25,180	86,118	539,518	1,916
2003	17,192	4,345	21,449	9,396	27,650	86,443	548,123	1,483
2004	22,534	4,463	20,175	10,670	28,100	92,355	552,057	2,392
2005	22,548	4,553	18,387	8,979	28,398	88,794	582,785	4,727
2006	26,452	4,158	14,508	8,192	21,257	79,903	582,084	3,796

County:

Hawaii

2002	13,724	560	5	5	17,329	44,554	172,980	NA
2003	13,811	440	5	5	19,639	46,900	179,231	NA
2004	16,873	407	5	5	21,211	51,627	195,599	NA
2005	16,796	319	5	5	20,179	50,432	215,204	NA
2006	19,809	256	5	5	17,470	48,330	201,387	NA

Honolulu

2002	572	2,960	14,401	6,314	4,179	30,232	183,957	NA
2003	203	2,594	13,502	6,789	4,674	29,298	⁶ 183,527	NA
2004	681	2,715	12,350	8,131	5,201	30,297	169,175	NA
2005	1,382	2,762	10,870	6,705	4,793	26,737	160,655	NA
2006	1,515	2,371	8,515	6,507	1,920	21,018	156,568	NA

Kauai

2002	1,442	430	5	5	5	5,278	46,132	NA
2003	912	414	5	5	5	4,139	51,216	NA
2004	1,965	482	5	5	5	3,921	51,573	NA
2005	1,685	592	5	5	5	3,218	52,536	NA
2006	1,725	611	5	5	5	4,308	61,859	NA

Maui

2002	2,588	838	5	5	5	6,054	136,449	NA
2003	2,266	897	5	5	5	6,106	134,149	NA
2004	3,015	859	5	5	5	6,510	135,710	NA
2005	2,686	880	5	5	5	8,408	154,391	NA
2006	3,403	920	5	5	5	6,247	162,270	NA

NA= Not available.

¹ Excludes interfarm sales; includes out-of-State sales of slaughter cattle and feeder calves.

² Sum of individual commodities may not add to total. Includes sheep, wool, turkeys, horses, honey, beeswax, broilers, and chickens.

³ Includes government payments, such as Agricultural Conservation Program, Cattle Indemnity Payment Program, Dairy Indemnity Payment Program, Emergency Conservation Program, Forestry Incentives Program, Emergency Feed Program, wool payments, and sugar support.

⁴ Sum of county estimates may not add to State total due to rounding.

⁵ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

⁶ Revised.



FOOD: U.S. expenditures by families and individuals, selected years, 1929-2006

Year	Disposable personal income	Expenditures for food					
		At home ¹		Away from home ²		Total ³	
	<i>Billion dollars</i>	<i>Billion dollars</i>	<i>Percent</i>	<i>Billion dollars</i>	<i>Percent</i>	<i>Billion dollars</i>	<i>Percent</i>
1929	83.4	16.9	20.3	2.6	3.1	19.5	23.4
1934	52.8	11.1	21.0	1.7	3.2	12.8	24.2
1939	71.4	13.0	18.1	2.3	3.2	15.2	21.3
1944	148.3	22.1	14.9	5.1	3.4	27.2	18.4
1949	190.4	34.3	18.0	7.8	4.1	42.0	22.1
1954	264.3	42.4	16.0	9.3	3.5	51.7	19.6
1959	350.5	50.1	14.3	12.1	3.5	62.3	17.8
1964	462.5	55.5	12.0	15.7	3.4	71.2	15.4
1969	674.0	69.0	10.2	23.4	3.5	92.3	13.7
1974	1,071.6	107.3	10.0	38.5	3.6	145.8	13.6
1979	1,793.5	164.0	9.1	76.9	4.3	240.9	13.4
1984	2,912.0	224.0	7.7	121.9	4.2	345.8	11.9
1989	4,021.7	⁴ 274.2	6.8	⁴ 165.4	4.1	⁴ 439.6	⁴ 10.9
1994	5,151.8	⁴ 336.4	6.5	⁴ 216.5	4.2	⁴ 552.9	10.7
1999	6,695.0	⁴ 408.5	6.1	⁴ 272.0	4.1	⁴ 680.5	10.2
2003	⁴ 8,162.5	⁴ 472.4	5.8	⁴ 329.5	4.0	⁴ 801.9	9.8
2004	⁴ 8,681.6	⁴ 491.5	5.7	⁴ 348.2	4.0	⁴ 839.7	9.7
2005	9,036.1	519.2	5.7	368.5	4.1	887.8	9.8
2006	9,534.8	551.1	5.8	396.1	4.2	947.1	9.9

¹ Food purchases from grocery stores and other retail outlets, including purchases with food stamps and WIC vouchers and food produced and consumed on farms (valued at farm prices) because the value of these foods is included in personal income. Excludes government-donated foods.

² Purchases of meals and snacks by families and individuals, and food furnished to employees since it is included in personal income. Excludes food paid for by government and business, such as donated foods to schools, meals in prisons and other institutions, and expense-account meals.

³ Total may not add due to rounding.

⁴ Revised.

Source: Economic Research Service, USDA.



RECORD HIGHS AND LOWS

Record highs and lows for selected items, State of Hawaii

Item	Unit	Record high		Record low		Year estimate started
		Quantity	Year ¹	Quantity	Year ¹	
Anthuriums						
Total sold	1,000 doz.	2,532	1980	216	1959	1959
Price ²	\$/doz.	9.09	1997	.71	1967	1959
Avocados						
Harvested	Acres	330	1986	90	1975	1946
Production	1,000 lbs.	1,600	1982	400	1996	1946
Price ²	¢/lb.	68.0	2006	6.1	1959	1946
Bananas						
Harvested	Acres	1,490	2001	550	1977	1946
Production	1,000 lbs.	29,000	2000	4,470	1983	1946
Price ²	¢/lb.	49.0	2006	4.6	1946	1946
Cabbage, head						
Harvested	Acres	740	1947	360	2004	1946
Production	1,000 lbs.	15,750	1989	6,800	1953	1946
Price ²	¢/lb.	28.0	2005	3.0	1959	1946
Coffee						
Harvested	Acres	6,800	2000	1,650	1985	1946
Production	1,000 lbs.	18,496	1957	990	1982	1946
Price ²	¢/lb.	500.0	2006	17.8	1946	1946
Foliage, potted (indoor)						
Sales (value)	\$1,000	19,236	2001	171	1972	1972
Ginger Root						
Harvested	Acres	360	2001	11	1974	1946
Production	1,000 lbs.	18,000	2001	352	1974	1946
Price ²	¢/lb.	92.3	1982	16.2	1949	1946
Guavas						
Harvested	Acres	1,040	1990	60	1957	1955
Production	1,000 lbs.	24,100	1990	1,737	1957	1955
Price ²	¢/lb.	15.0	2002	3.1	1956	1955
Macadamia nuts						
Harvested	Acres	19,300	1995	830	1953	1946
Production (<i>net, wet-in-shell</i>)	1,000 lbs.	58,000	2006	630	1946	1946
Price ² (<i>net, wet-in-shell</i>)	¢/lb.	90.0	1988	15.2	1946	1946
Papayas						
Harvested	Acres	2,650	1985	320	1952	1946
Production	1,000 lbs.	80,500	1984	5,525	1947	1946
Price ²	¢/lb.	48.9	1997	3.2	1946	1946

See footnotes at end of table.

Continued



Record highs and lows for selected items, State of Hawaii -- Continued

Item	Unit	Record high		Record low		Year estimate started
		Quantity	Year ¹	Quantity	Year ¹	
Pineapples						
Total in crop	Acres	76,700	1957	13,000	2004	1946
Production	1,000 tons	1,048	1955	188	2006	1950
Value (farm)	\$1,000	107,775	1991	29,700	1951	1950
Sugar ³						
Harvested	Acres	145,000	1933	19,300	2001	1909
Yield/acre (sugar)	Tons/acre	13.15	2003	4.81	1910	1909
Production (raw sugar)	1,000 tons	1,234	1966	213	2006	1909
Price ² (sugar)	\$/ton	633.00	1974	52.00	1940	1909
Taro						
Harvested	Acres	1,020	1948	320	1980	1946
Production	1,000 lbs.	14,195	1948	4,000	2005	1946
Price ²	¢/lb.	57.0	2006	3.1	1949	1946
Tomatoes						
Harvested	Acres	770	2006	150	1972	1946
Production	1,000 lbs.	17,500	2003	3,300	1972	1946
Price ²	¢/lb.	77.0	2006	9.1	1947	1946
Watermelons						
Harvested	Acres	870	1950	125	1979	1946
Production	1,000 lbs.	20,400	1995	1,130	1979	1946
Price ²	¢/lb.	28.0	2006	6.4	1955	1946
Cattle and calves						
Jan. 1 inventory	Head	249,000	1971	130,000	1946	1946
Production (live weight)	1,000 lbs.	64,750	1989	25,470	1953	1946
Price ²	\$/cwt.	76.70	2006	12.30	1946	1946
Hogs and pigs						
Dec. 1 inventory	Head	72,000	1965	16,000	2006	1960
Production (live weight)	1,000 lbs.	13,159	1978	4,485	2006	1960
Price ²	\$/cwt.	92.70	2006	29.50	1964	1960
Milk						
Marketings	Million lbs.	157.1	1988	65.2	1946	1946
Production per cow	lbs./cow	14,667	2002	8,750	1960	1960
Price ²	\$/cwt.	27.00	2005	6.75	1946	1946
Eggs						
Layers Dec. 1	Birds	1,037,000	1974	302,000	1950	1950
Production	Million eggs	229.3	1979	98.3	2006	1958
Price ²	¢/doz.	108.0	2004	39.2	1968	1958

¹ In case of a tie, the most recent year was used.

² Prices are annual or crop-year average.

³ Primary data source, Hawaii Agricultural Research Center.



AGRICULTURE'S CONTRIBUTIONS TO HAWAII'S ECONOMY, 2000

If you inquire about the size of a condominium unit, one person might respond by stating the number of bedrooms, bathrooms, and associated parking stalls. Alternatively, another might state the square-foot area of its interior area and lanai. Both descriptions convey useful but different information.

Likewise, when we describe the contribution of agriculture to Hawaii's economy, we can portray it in several ways. The actual estimates may vary depending on what is defined as "agriculture" and on the methodology applied to develop the estimates. Here, we define agriculture as including farm production, forestry, fisheries, agricultural services, and food processing, as well as the related distribution margins (transportation, wholesale, and retail) used in delivering agricultural products and services. Then, we summarize and compare three measures of contribution--sales, value added (GSP), and employment--for three benchmark years: 1992, 1997, and 2000. (For more detail on this subject, see CTAHR publication EI-3, *Agriculture's Contribution to Hawaii's Economy--An Update*, available at <www.ctahr.hawaii.edu>).

Agriculture sales

Sales value is the most common measure of economic activities. It includes the farmgate value routinely reported by the Hawaii Department of Agriculture. Total agriculture sales (farm production, agricultural service, forestry and fisheries, and food processing) decreased from \$2.14 billion in 1992 to \$1.87 billion in 1997 but rebounded to \$1.94 billion in 2000.

While sugarcane sales value declined sharply by 10% annually during the 1992-2000 period, pineapple sales value remained stable at \$102 million after a slight decline in 1997. The continual decrease in sugarcane sales value is largely offset by the tremendous growth in sales value of diversified agriculture (including seed crops, coffee, macadamia nuts, fruits, vegetables, flowers, and nursery products), which increased at an annual rate of 3.8% between 1992 and 2000. Reflecting this trend, the sales value of diversified agriculture jumped from just over 50% of total farm production in 1992 to almost 70% in 2000. Diversified agriculture posted record high sales of \$357 million in 2000.

Value added--the contribution to GSP

An industry's gross state product (GSP) is the value added in production contributed by labor and property. It is equivalent to the value of production minus the value of intermediate goods that producers buy from other producers. Hawaii's economy as measured by total GSP decreased slightly at an annual rate of 0.8% during the 1992-1997 period, but it rebounded at a yearly rate of 1.7% from 1997 to 2000. Agriculture's GSP likewise decreased during the 1992-1997 period, at a higher annual rate of 2.3%, but it came back strongly from 1997 to 2000 with a robust annual rate of increase of 2.5%. During this latter period, agriculture's contribution to Hawaii's economy had a

higher rate of growth than the other sectors combined. Agriculture, including its distribution margins, contributes 3.1% of Hawaii's total GSP--a fairly constant share since 1992.

Agriculture's contribution to employment

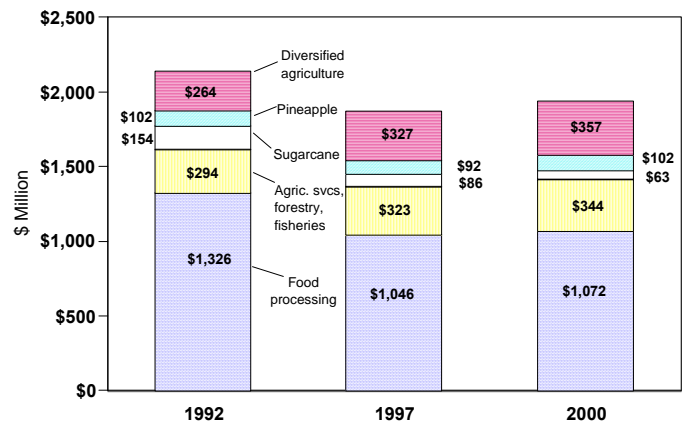
Employment (the number of full and part-time jobs) provides another good indicator in measuring the contribution of an industry to the economy. In 1992, agriculture contributed 4.2% of total employment in the state, but it declined slightly to 3.7% in 1997, before reversing the trend and rising to 3.8% in 2000. When distribution margins are included, agriculture in 2000 contributed over 38,000 jobs, or 5.0% of the total statewide employment.

Alternate methodology

The U.S. Department of Agriculture's Economic Research Service (USDA-ERS) also estimates the impact of agriculture in Hawaii. ERS uses the national input-output table to assess the total economic activity (in terms of value added, employment, and output) in providing food, clothing, tobacco, flowers, and other agricultural products to the final consumers. By this measure, in 1997 the estimated total contribution of Hawaii's agriculture in terms of value added was \$4.72 billion and employment was 114,431 jobs; these correspond to 12.3% of Hawaii's total value added and 15.4% of state employment¹. These estimates are obviously higher than those presented above, primarily due to the much-expanded definition of agriculture used by ERS.

¹ Dr. William Edmondson, ERS-USDA, provided the 1997 estimates, the most recent available.

Sales by agricultural sector



PingSun Leung, Dept. of Molecular Biosciences and Bioengineering, and Matthew K. Loke, Hawaii Department of Agriculture. Published by the College of Tropical Agriculture and Human Resources (CTAHR) and issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Andrew G. Hashimoto, Director/Dean, Cooperative Extension Service/CTAHR, University of Hawaii at Manoa, Honolulu, Hawaii 96822. An Equal Opportunity / Affirmative Action Institution providing programs and services to the people of Hawaii without regard to race, sex, age, religion, color, national origin, ancestry, disability, marital status, arrest and court record, sexual orientation, or veteran status. CTAHR publications can be found on the Web site <<http://www.ctahr.hawaii.edu>> or ordered by calling 808-956-7046 or sending e-mail to ctahrpub@hawaii.edu.



FARM BUSINESS BALANCE SHEET: State of Hawaii, December 31, 2002-2006

	2002	2003	2004 ¹	2005 ¹	2006 ¹
<i>1,000 dollars</i>					
Farm assets	4,175,231	4,463,007			
Farm debt ²	276,628	282,687			
Real estate	155,693	161,281			
Nonreal estate	120,935	121,406			
Equity	3,898,603	4,180,320			
Ratio:					
Debt/equity	7.1	6.8			
Debt/assets	6.6	6.3			

¹ Data discontinued.

² Excludes debt for nonfarm purposes.

Source: Economic Research Service, USDA.

FARM FINANCIAL INDICATORS: Value added to the Hawaii economy by the agricultural sector via the production of goods and services, 2002-2006¹

Item ²	2002	2003	2004	2005	2006
<i>1,000 dollars</i>					
Value of crop production	453,815	461,215	461,069	487,574	467,170
Value of livestock production	85,257	89,549	92,361	93,128	86,482
Revenues from services and forestry	62,623	68,630	76,061	70,990	71,852
Machine hire and customwork	11,563	15,715	17,598	14,892	14,197
Forest products sold	400	400	400	400	400
Other farm income	19,789	20,673	22,917	19,250	20,772
Gross imputed rental value of farm dwellings	30,871	31,842	35,146	36,448	36,483
Value of agricultural sector production	601,694	619,394	629,491	651,693	625,504
less: Purchased inputs	210,959	226,720	226,639	245,404	247,526
Farm origin	48,275	48,484	51,760	50,301	47,437
Manufactured inputs	59,844	66,760	72,916	85,813	88,952
Other purchased inputs	102,840	111,476	101,963	109,290	111,137
plus: Net government transactions	(5,017)	(5,777)	(5,415)	(3,863)	(5,481)
Gross value added	385,718	386,896	397,438	402,426	372,497
less: Capital consumption	39,202	40,141	42,062	44,017	45,657
Net value added	346,516	346,755	355,376	358,409	326,840
less: Payments to stakeholders	211,250	198,504	220,089	217,726	221,308
Employee compensation (total hired labor)	182,604	171,022	192,122	187,873	189,893
Net rent received by nonoperator landlords	10,872	11,228	11,617	11,337	10,402
Real estate and nonreal estate interest	17,774	16,254	16,350	18,516	21,013
Net farm income	135,266	148,251	135,287	140,683	105,532

¹ Revised.

² Value of agricultural sector production is the gross value of the commodities and services produced within a year. Net value-added is the sector's contribution to the National Economy and is the sum of the income from production earned by all factors-of-production, regardless of ownership. Net farm income is the farm operators' share of income from the sector's production activities. The concept presented is consistent with that employed by the Organization for Economic Cooperation and Development.

Source: Economic Research Service, USDA.



2006 SUGAR AND SPECIALTY CROP HIGHLIGHTS

◆ Sugar

Production for 2006 decreased 16 percent from the previous year to 213,000 tons of 96° raw sugar. The plantations were able to harvest 1.6 million tons of sugarcane from 20,400 acres, an average yield of 79.1 tons of sugarcane per acre. Sugar prices during 2006 increased 1 percent to \$351 per ton of 96° raw sugar, which generated in a raw sugar total value of \$74.8 million, 15 percent below 2005.

◆ Coffee

Total farm revenues of Hawaii's 2006-2007 coffee is estimated at \$37 million (parchment basis), down 1 percent from the 2005-2006 season. This decrease in revenue resulted as a 45 cent increase in the average farm price was more than offset by a 10 percent drop in production to 7.4 million pounds (parchment equivalent basis). Hawaii County accounted for \$25.6 million or 69 percent of the state's total farm revenue. The combined farm value of Honolulu, Kauai, and Maui Counties was \$11.4 million (parchment equivalent basis), up 82 percent from the 2005-2006 season.

Production decreased in Hawaii County, but increased in other areas. Hawaii County produced 4.0 million pounds (parchment equivalent basis) during the 2006-2007 season. This was 31 percent below last year's 5.8 million pounds. Production from the combined areas of Honolulu, Kauai, and Maui Counties increased to 3.4 million pounds (parchment equivalent basis). State yields declined to 1,200 pounds per acre compared to 1,300 pounds a year ago.

Total acreage harvested increased 3 percent from last season to 6,300 acres. Acreage harvested declined 9 percent in Hawaii County to 3,000, while other counties recorded an increase to 3,300 acres or 18 percent above the previous year.

The statewide farm price for coffee averaged a record high \$5.00 per pound (parchment equivalent basis) for the 2006-2007 season, up 10 percent for the 2005-2006 season previously record high farm price of \$4.55 per pound. Hawaii County growers received an average of \$6.40 per pound (parchment equivalent basis) during the 2006-2007 season. Growers on Honolulu, Kauai, and Maui Counties received an average of \$3.353 per pound (parchment equivalent basis) for coffee during the 2006-2007 season.

◆ Macadamia Nuts

Hawaii's 2006-2007 macadamia nut harvest is estimated at 58.0 million pounds net, wet-in-shell, up 4.0 million pounds from last season's harvest. While it was not the highest on record, output for the 2006-2007 season matched the previous high set back during the 1997-1998 crop year. For some macadamia nut orchards located in normally drier areas, rainfall was welcomed. However, macadamia nut orchards located in normally wet areas suffered lower output due to disease problems.

Total acreage for 2006-2007 decreased 1,300 acres to 17,000 acres while harvested area totaled 15,000 acres, a 3,000 acre decline from last season. The farm price for net, wet-in-shell macadamia nuts averaged 67.0 cents per pound, 14.0 cents less than the 2005-2006 average.

Early in the season, one large processor announced a limitation of nut purchases from independent growers. Many growers reported this to be a problem and with lower nut prices, the crop was not harvested by some growers as well as some operators moving to other commodities. Growers also related that feral pigs were a problem in some areas.



**COFFEE: Number of farms, acreage, yield, marketings, price, and value,
by county, 2002/2003-2006/2007 crop years**

Crop year ¹	Farms	Acreage		Yield per acre ²	Marketings ³	Farm prices			Value of sales	Green production
		In crop	Harvested			Cherry	Parchment	All ⁴		
	<i>Number</i>	<i>----- Acres -----</i>		<i>----- 1,000 pounds -----</i>		<i>----- Cents per pound -----</i>			<i>1,000 dollars</i>	<i>1,000 pounds</i>
State										
2002-2003	710	7,200	5,900	1.3	7,500			310.0	23,250	5,900
2003-2004	715	7,300	5,900	1.4	8,300			290.0	24,070	6,600
2004-2005	750	7,700	5,800	1.0	5,600			355.0	19,880	4,500
2005-2006	790	7,900	6,100	1.3	8,200			455.0	37,310	6,600
2006-2007	820	8,200	6,300	1.2	7,400			500.0	37,000	5,700
County:										
Hawaii										
2002-2003	680	3,500	2,850	1.4	4,100	90.0	405.0	390.0	15,990	3,200
2003-2004	690	3,600	3,000	1.3	4,000	85.0	365.0	380.0	15,200	3,200
2004-2005	710	3,750	3,300	1.0	3,200	110.0	660.0	465.0	14,880	⁵ 2,560
2005-2006	745	3,800	3,300	1.8	5,800	120.0	670.0	535.0	31,030	4,700
2006-2007	775	3,800	3,000	1.3	4,000	135.0	765.0	640.0	25,600	3,000
Honolulu/Kauai/Maui⁶										
2002-2003	30	3,700	3,050	1.1	3,400			213.5	7,260	2,700
2003-2004	25	3,700	2,900	1.5	4,300			206.3	8,870	3,400
2004-2005	40	3,950	2,500	1.0	2,400			208.3	5,000	⁵ 1,940
2005-2006	45	4,100	2,800	.9	2,400			261.7	6,280	1,900
2006-2007	45	4,400	3,300	1.0	3,400			335.3	11,400	2,700

¹ Coffee harvesting occurs throughout the year in Hawaii. The main harvest normally begins in late summer and extends to the early part of the following year.

² Average yields based on parchment equivalent marketings and harvested acreage.

³ Expressed in parchment equivalent pounds. Coffee marketed in cherry form was converted to an equivalent parchment weight and added to parchment marketings.

⁴ Represents an average farm price for parchment equivalent sales. Obtained by dividing farm revenues from the sale of cherry and parchment coffee by total marketings (parchment equivalent basis).

⁵ Revised.

⁶ Kauai and Maui combined with Honolulu to avoid disclosure of individual operations.



GINGER ROOT, KAVA (AWA)

Hawaii's ginger root farms harvested 2.8 million pounds during the 2006-2007 season, down 35 percent from the 2005-2006 season and the smallest crop since the 1979-1980 season. The average farm price is estimated at 85.0 cents per pound for the season, up 21 percent from the previous season's farm price of 70.0 cents per pound. Total farm value of the 2006-2007 harvest is estimated at \$2.4 million, down 21 percent from the 2005-2006 season.

Ginger root growers harvested 80 acres during the 2006-2007 season, down 20 percent from the previous season and the lowest in 27 years. Weather conditions were less than ideal for ginger root during this season as ginger root needs abundant rainfall during its growth phase. The major producing areas of the island of Hawaii experienced an overall dry year. Also, higher import levels of lower priced ginger root from China impacted Hawaii growers.

GINGER ROOT: Acreage, yield, production, price, and value, State of Hawaii, 2002/2003-2006/2007 crop years

Crop year ¹	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
2002-2003	160	37.5	6,000	60.0	3,600
2003-2004	150	40.0	6,000	90.0	5,400
2004-2005	120	42.5	5,100	80.0	4,080
2005-2006	100	43.0	4,300	70.0	3,010
2006-2007	80	35.0	2,800	85.0	2,380

¹ Harvesting normally begins in December and continues into the following year.

GINGER ROOT: U.S. imports, 2002-2006

Year	Unground (including fresh)	Ground	Sweet	Candied	Total ¹
					1,000 pounds
2002	44,306	2,244	3,315	3,017	52,882
2003	57,548	2,740	4,828	3,137	68,252
2004	59,162	4,603	5,784	2,957	72,506
2005	66,202	3,742	7,583	3,472	80,999
2006	68,738	3,029	8,034	4,268	84,069

¹ Sum of categories may not add to total due to rounding.

Source: Foreign Agricultural Trade of the United States, Economic Research Service, U.S. Department of Agriculture.

KAVA (AWA): Number of farms, acreage, production, price, and value, State of Hawaii, 2002-2006

Year	Farms	Acreage ¹		Total sales ³	Farm price ⁴	Value of sales
		Total ²	Harvested			
	Number	----- Acres -----		1,000 pounds	Dollars per pound	1,000 dollars
2002	55	50	15	60	1.15	69
2003	25	20	10	25	4.40	110
2004 ⁵						
2005 ⁵						
2006 ⁵						

¹ Includes kava inter-planted with another crop. ² As of December 31. ³ Fresh weight basis. Dried kava (awa) sales were converted to a fresh weight basis by multiplying by five. Includes all type of sales, including organic. ⁴ Represents average farm price for fresh sales. ⁵ Beginning 2004, data series discontinued.



FRESH HERBS: Production, price, and value, State of Hawaii, 2002-2006

Year	Basil			Parsley	Chinese parsley (Cilantro)	Other herbs ¹	All herbs
	Sweet (Italian)	Asian	Total				

Production – 1,000 pounds

2002	2,000	1,000	3,000	300	300	550	4,150
2003	2,000	1,200	3,200	310	250	440	4,200
2004	1,800	1,000	2,800	280	240	580	3,900
2005	1,700	1,300	3,000	250	200	950	4,400
2006	2,000	1,600	3,600	250	200	1,650	5,700

Farm price – dollars per pound

2002	1.95	.85		1.70	1.50	2.30	
2003	2.00	.80		2.20	2.10	2.45	
2004	2.05	.95		2.00	2.20	2.15	
2005	2.45	1.10		1.85	2.60	2.15	
2006	1.90	.95		1.85	2.40	1.70	

Farm value – 1,000 dollars

2002	3,900	850	4,750	510	450	1,265	6,975
2003	4,000	960	4,960	682	525	1,078	7,245
2004	3,690	950	4,640	560	528	1,247	6,975
2005	4,165	1,430	5,595	463	520	2,043	8,621
2006	3,800	1,520	5,320	462	480	2,805	9,067

¹ Includes spearmint, dill, and other herbs; some of which cannot be published separately to avoid disclosure. Also includes small amount of basil and parsley for which an individual total could not be obtained.

SEED CROPS: Number of farms, acreage, outshipments, and value, State of Hawaii, 2002/2003-2006/2007

Crop year ¹	Farms	Acreage				Total outshipments of seed	Value ²		
		Total	Nursery	Seed increase	Grow-out or observation		Total	Seed corn	Other seed crops
	<i>Number</i>	<i>Acres</i>				<i>1,000 pounds</i>	<i>1,000 dollars</i>		
2002-2003	7	3,900	1,210	2,580	110	5,850	48,145	47,060	1,085
2003-2004	10	3,900	1,045	2,730	125	6,500	49,160	47,435	1,725
2004-2005	10	3,680	1,090	2,450	140	6,900	62,600	60,200	2,400
2005-2006	10	4,140	1,360	2,740	40	7,550	77,330	74,800	2,530
2006-2007	10	4,820	1,390	3,380	50	9,020	97,580	93,970	3,610

¹ Seed crops are grown year-round in Hawaii with the main season from November to June.

² Value is based on sales or gross operational budgets.



SUGARCANE

SUGARCANE: Number of farms, acreage, yield, production, price, and value, by county, 2002-2006¹

Year	Farms ²	Acreage		Yield per acre		Production of cane for sugar	Farm price ³	Value of cane for sugar ⁴
		In crop ²	Harvested for sugar	Sugarcane ³	Raw sugar 96 ^o			
	<i>Number</i>	<i>----- 1,000 acres -----</i>		<i>----- Tons -----</i>		<i>1,000 tons</i>	<i>Dollars per ton</i>	<i>Million dollars</i>
State								
2002	2	47.5	21.3	99.0	12.67	2,109	30.50	64.3
2003	2	47.8	19.9	102.0	13.15	2,030	31.70	64.4
2004	2	43.0	21.8	90.8	11.83	1,979	31.10	61.5
2005	2	40.1	21.7	80.8	11.61	1,753	33.60	58.9
2006	2	42.1	20.4	79.1	10.44	1,614	31.10	50.2
County:								
Kauai								
2002	1	10.8	4.8	86.5	11.40	415	31.30	13.0
2003	1	11.1	4.2	92.6	13.19	389	34.70	13.5
2004	1	8.2	4.9	87.8	12.06	430	35.60	15.3
2005	1	7.1	5.1	82.7	11.70	422	34.80	14.7
2006	1	7.2	3.5	83.1	11.44	291	32.70	9.5
Maui								
2002	1	36.7	16.5	102.7	13.04	1,694	30.30	51.3
2003	1	36.7	15.7	104.5	13.14	1,641	31.00	50.9
2004	1	34.8	16.9	91.7	11.77	1,549	29.80	46.2
2005	1	33.0	16.6	80.2	11.58	1,331	33.20	44.2
2006	1	34.9	16.9	78.3	10.24	1,323	30.80	40.7

¹ Primary data source, Hawaii Agricultural Research Center.

² At end of year.

³ Yield and farm price may not compute exactly due to rounding.

⁴ Value of cane for sugar estimated by deducting processing and marketing costs from value of sugar and molasses.


SUGAR: Production of raw sugar and molasses, price, and value, by county, 2002-2006 ¹

Year	Mill production		Average returns received ²		Value of production		
	Raw sugar 96 °	Molasses ³	Raw sugar 96 °	Molasses ³	Raw sugar 96 °	Molasses ³	Total
	----- 1,000 tons -----		----- Dollars per ton -----		----- Million dollars -----		
State							
2002	270	90	355	49.40	95.9	4.4	100.3
2003	261	90	367	35.20	95.9	3.1	99.0
2004	258	80	355	29.50	91.7	2.4	94.1
2005	253	73	347	63.30	87.9	4.6	92.5
2006	213	66	351	74.70	74.8	4.9	79.7
County:							
Kauai							
2002	54	16	359	45.90	19.4	.7	20.1
2003	55	15	365	34.90	20.1	.5	20.6
2004	59	15	386	40.00	22.8	.6	23.4
2005	60	16	365	75.00	21.9	1.2	23.1
2006	40	10	356	70.00	14.2	.7	14.9
Maui							
2002	216	74	354	50.10	76.5	3.7	80.2
2003	206	75	368	35.30	75.8	2.6	78.4
2004	199	65	346	27.10	68.9	1.8	70.7
2005	193	57	342	60.00	66.0	3.4	69.4
2006	173	56	350	75.50	60.6	4.2	64.8

¹ Primary data source, Hawaii Agricultural Research Center.

² Derived from production and value. State and county prices may not compute exactly due to rounding.

³ Commercial.



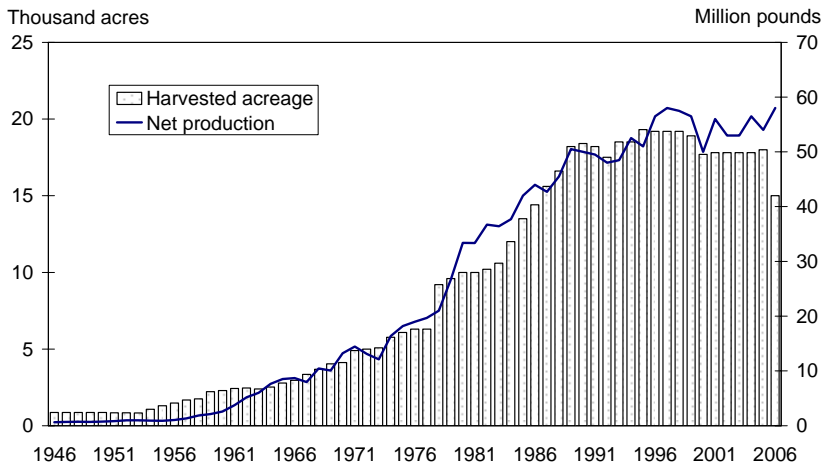
MACADAMIA NUTS

MACADAMIA NUTS: Number of farms, acreage, yield, production, moisture, price, and value, State of Hawaii, 2002/2003-2006/2007 crop years

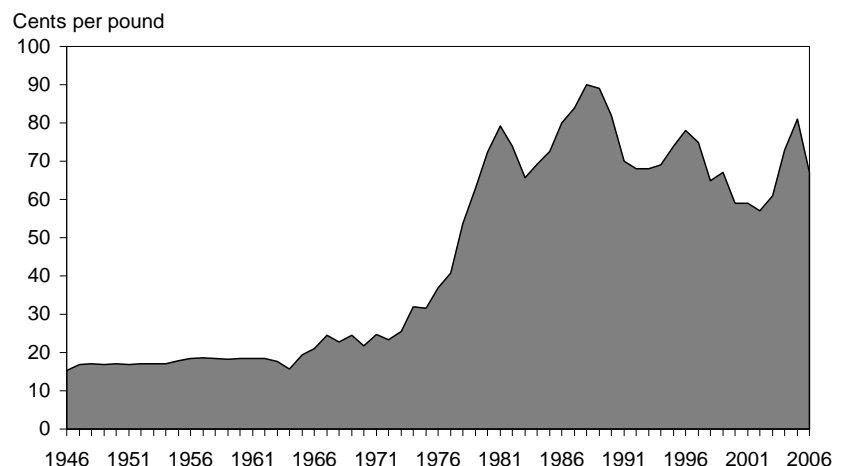
Crop year ¹	Farms	Acreage		Yield per acre ³	Production ⁴		Average moisture		Farm prices ⁴		Farm value ⁸
		In crop	Harvested ²		Gross ⁵	Net ⁶	Entire crop	Purchases only	Gross ⁷	Net	
	Number	----- Acres -----			----- 1,000 pounds -----		----- Percent -----		Cents per pound -----		1,000 dollars
2002-2003	650	18,000	17,800	3.0	60,000	53,000	20.4	20.7	50.4	57.0	30,210
2003-2004	650	18,000	17,800	3.0	60,000	53,000	20.2	20.7	53.9	61.0	32,330
2004-2005	650	18,000	17,800	3.2	63,000	56,500	20.7	21.0	65.5	73.0	41,245
2005-2006	650	18,300	18,000	3.0	62,000	54,000	20.7	20.4	70.5	81.0	43,740
2006-2007	570	17,000	15,000	3.9	65,000	58,000	21.2	22.1	59.8	67.0	38,860

¹ Season begins July 1st and ends June 30th of the following year. ² Called bearing acreage prior to 1993-94 crop year. ³ Net production divided by acreage harvested. ⁴ Wet-in-shell basis, delivered to processors. ⁵ Gross pounds delivered for processing. ⁶ Gross pounds delivered for processing less total spoilage. ⁷ Farm value divided by gross production. ⁸ Net production multiplied by net farm price.

MACADAMIA NUTS: Harvested Acreage and Net Production, State of Hawaii, 1946-2006 Seasons



MACADAMIA NUTS: Net, Wet-in-shell Farm Prices, State of Hawaii, 1946-2006 Seasons



FLORICULTURE AND NURSERY PRODUCTS



Hawaii County growers of flowers and nursery products accounted for 52 percent of the State's total wholesale value of flowers and nursery products in 2006. Hawaii County's 410 growers rang up sales of \$51.9 million, 3 percent less than the \$53.4 million in 2005. Honolulu's 250 producers accounted for 33 percent of the State's total wholesale value of

flowers and nursery products. Honolulu farmers reported sales of \$33.5 million, 3 percent above 2005. Maui County's 195 producers generated \$12.3 million in sales, 3 percent more than a year ago. Kauai's 75 producers registered \$2.9 million in sales, 8 percent less than 2005.

FLORICULTURE AND NURSERY PRODUCTS: Value of grower sales, by county, 2002-2006

Year	Cut flowers ¹	Orchids ²	Lei flowers	Foliage ³	Potted flowering plants	All other nursery products ⁴	Unspecified sales ⁵	Total
<i>1,000 dollars</i>								
State								
2002	13,055	22,823	4,170	17,746	7,052	29,569	1,300	95,715
2003	14,183	23,439	3,704	16,966	5,563	30,391	1,355	95,601
2004	13,204	22,769	3,397	17,621	6,004	30,848	1,335	95,178
2005	13,997	22,225	3,687	19,509	6,278	33,796	1,470	100,962
2006	14,117	22,182	3,473	18,106	6,363	34,998	1,450	100,689
County:								
Hawaii								
2002	9,191	13,903	1,180	14,860	2,220	7,941	575	49,870
2003	10,321	14,220	1,081	14,358	1,086	8,505	635	50,206
2004	9,752	14,514	911	15,083	1,083	8,431	640	50,414
2005	10,160	14,302	933	16,826	965	9,663	600	53,449
2006	10,145	14,495	804	14,810	1,160	9,936	595	51,945
Honolulu								
2002	694	7,587	1,412	2,301	3,465	16,307	340	32,106
2003	639	7,134	1,400	2,157	3,293	16,099	370	31,092
2004	733	6,813	1,554	2,024	3,488	17,221	340	32,173
2005	806	6,490	1,482	2,143	3,409	17,669	400	32,399
2006	955	6,197	1,342	2,296	3,569	18,810	355	33,524
Kauai								
2002	363	326	⁶	⁶	84	1,715	145	2,633
2003	261	456	109	86	140	1,885	130	3,067
2004	189	524	52	64	159	1,928	140	3,056
2005	193	442	23	58	283	2,045	160	3,204
2006	232	498	33	343	98	1,600	140	2,944
Maui								
2002	2,807	1,007	⁶	⁶	1,283	5,769	240	11,106
2003	2,962	1,629	1,114	365	1,044	3,902	220	11,236
2004	2,530	918	880	450	1,274	3,268	215	9,535
2005	2,838	991	1,249	482	1,621	4,419	310	11,910
2006	2,785	992	1,294	657	1,536	4,652	360	12,276

¹ Cut orchids included in "Orchids" category. ² Excludes orchids used for lei flowers. ³ Includes potted, cut, and unfinished. Beginning 1998, landscape foliage included with "All other nursery products". ⁴ Includes bedding plants, plant rentals, sod, trees, and any other nursery products not elsewhere classified. Sum of county estimates may not add to State total due to rounding. ⁵ Includes grower sales greater than \$999 but less than \$10,000 which were not categorized. ⁶ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.



FLORICULTURE AND NURSERY PRODUCTS

FLORICULTURE AND NURSERY PRODUCTS: Number of farms, quantity, and value, State of Hawaii, 2002-2006 ¹

Crop	Farms having sales ²	Quantity sold	Value of sales
	<i>Number</i>	<i>1,000</i>	<i>1,000 dollars</i>
CUT FLOWERS			
Anthuriums - dozens			
2002	66	738	4,720
2003	61	810	5,832
2004	59	617	4,665
2005	58	592	5,101
2006	57	674	5,459
Birds of Paradise - dozens			
2002	24	94	666
2003	29	74	586
2004	30	51	426
2005	33	49	380
2006	31	46	352
Chrysanthemums, pompon - bunches			
2002	4	225	469
2003	4	229	480
2004	4	217	453
2005	4	211	447
2006	5	205	441
Ginger, pink - dozens			
2002	40	59	474
2003	40	54	477
2004	45	47	456
2005	47	62	454
2006	52	69	549
Ginger, red - dozens			
2002	56	147	1,048
2003	57	140	1,013
2004	57	132	1,044
2005	64	134	995
2006	60	135	1,059
Gingers, other - dozens			
2002	22	25	197
2003	27	23	228
2004	32	23	261
2005	24	18	163
2006	20	21	206

See footnotes at end of table.

Continued



FLORICULTURE AND NURSERY PRODUCTS: Number of farms, quantity, and value, State of Hawaii, 2002-2006 ¹ -- Continued

Crop	Farms having sales ²	Quantity sold	Value of sales
	<i>Number</i>	<i>1,000</i>	<i>1,000 dollars</i>
Heliconias - dozens			
2002	50	78	734
2003	58	66	792
2004	60	71	853
2005	60	71	762
2006	64	68	822
Proteas - stems			
2002	25	1,475	1,108
2003	24	2,012	1,515
2004	32	1,921	1,416
2005	28	1,635	1,928
2006	29	2,293	1,828
Other cut flowers - dozens			
2002	55	NA	3,639
2003	49	NA	3,260
2004	49	NA	3,630
2005	47	NA	3,767
2006	37	NA	3,401
ORCHIDS			
Cymbidiums, cut - flowers			
2002	12	464	247
2003	11	464	229
2004	13	408	291
2005	13	428	311
2006	7	356	263
Dendrobiums, sprays - dozens			
2002	54	462	3,218
2003	50	410	3,069
2004	50	453	3,194
2005	48	391	3,078
2006	43	309	2,481
Oncidiums, sprays - dozens			
2002	34	64	641
2003	34	79	770
2004	29	60	706
2005	28	59	674
2006	26	59	630

See footnotes at end of table.

Continued



FLORICULTURE AND NURSERY PRODUCTS

FLORICULTURE AND NURSERY PRODUCTS: Number of farms, quantity, and value, State of Hawaii, 2002-2006 ¹ -- Continued

Crop	Farms having sales ²	Quantity sold	Value of sales
	<i>Number</i>	<i>1,000</i>	<i>1,000 dollars</i>
Other orchid sprays ³ - dozens			
2002	16	NA	210
2003	17	NA	656
2004	18	NA	183
2005	13	NA	107
2006	15	NA	722
Dendrobiums, potted ⁴ - pots			
2002	76	1,354	7,318
2003	81	1,096	6,154
2004	80	1,236	6,679
2005	77	1,142	6,056
2006	76	1,127	5,768
Oncidiums, potted ⁵ - pots			
2002			
2003			
2004	43	464	3,113
2005	46	403	2,942
2006	36	221	1,304
Phalaenopsis, potted - pots			
2002	28	178	1,214
2003	31	246	1,695
2004	32	174	1,018
2005	23	80	717
2006	23	90	752
Other potted orchids - pots			
2002	82	1,922	9,975
2003	88	1,814	10,866
2004	78	1,352	7,585
2005	75	1,374	8,340
2006	78	1,685	10,262

See footnotes at end of table.

Continued



FLORICULTURE AND NURSERY PRODUCTS: Number of farms, quantity, and value, State of Hawaii, 2002-2006 ¹ -- Continued

Crop	Farms having sales ²	Quantity sold	Value of sales
	<i>Number</i>	<i>1,000</i>	<i>1,000 dollars</i>
FOLIAGE			
Dracaena, potted			
2002	36	NA	5,604
2003	32	NA	5,573
2004	29	NA	5,735
2005	28	NA	7,030
2006	27	NA	5,590
Palms, potted			
2002	46	NA	7,966
2003	49	NA	7,404
2004	45	NA	7,311
2005	49	NA	8,135
2006	48	NA	8,309
Hanging baskets, potted			
2002	16	NA	182
2003	17	NA	146
2004	16	NA	208
2005	13	NA	178
2006	14	NA	110
Other potted foliage			
2002	29	NA	2,368
2003	32	NA	2,209
2004	28	NA	2,702
2005	31	NA	2,499
2006	29	NA	2,252
Ti leaves, cut - leaves			
2002	40	5,900	632
2003	43	7,900	746
2004	39	6,100	571
2005	41	5,800	668
2006	46	6,400	710
Other cut greens			
2002	28	NA	259
2003	31	NA	317
2004	34	NA	352
2005	46	NA	382
2006	44	NA	531
Unfinished foliage stock (for further growing on)			
2002	11	NA	735
2003	9	NA	571
2004	11	NA	742
2005	10	NA	617
2006	10	NA	604

See footnotes at end of table.

Continued



FLORICULTURE AND NURSERY PRODUCTS

FLORICULTURE AND NURSERY PRODUCTS: Number of farms, quantity, and value, State of Hawaii, 2002-2006 ¹ -- Continued

Crop	Farms having sales ²	Quantity sold	Value of sales
	<i>Number</i>	<i>1,000</i>	<i>1,000 dollars</i>
LEI/INDIVIDUAL BLOOMS			
Carnations – blooms			
2002	7	7,000	360
2003	7	5,000	268
2004	5	3,800	242
2005 ⁶			
2006 ⁶			
Dendrobiums - blooms			
2002	29	29,300	908
2003	30	25,700	847
2004	26	18,100	580
2005	21	17,300	588
2006	23	14,800	532
Pikake - strands			
2002	9	81.0	242
2003	7	67.0	202
2004	5	56.0	158
2005	5	25.0	79
2006	5	23.0	60
Plumerias - blooms			
2002	14	25,200	604
2003	14	21,200	537
2004	13	16,000	510
2005	14	14,500	506
2006	15	12,700	372
Tuberoses - blooms			
2002	6	35,300	1,641
2003	7	32,200	1,484
2004	7	28,200	1,301
2005 ⁶			
2006 ⁶			
Vanda, Miss Joaquim - blooms			
2002	4	2,700	87
2003	6	2,700	86
2004	8	5,700	210
2005	6	8,300	306
2006	6	10,900	425
Other lei/individual - blooms			
2002	NA	NA	328
2003	NA	NA	280
2004	NA	NA	396
2005	NA	NA	2,208
2006	NA	NA	2,084

See footnotes at end of table.

Continued



FLORICULTURE AND NURSERY PRODUCTS: Number of farms, quantity, and value, State of Hawaii, 2002-2006 ¹ -- Continued

Crop	Farms having sales ²	Quantity sold	Value of sales
	<i>Number</i>	<i>1,000</i>	<i>1,000 dollars</i>
POTTED FLOWERING PLANTS			
Anthuriums - pots			
2002	26	144	751
2003	30	148	804
2004	28	164	883
2005	17	101	549
2006	18	109	497
Bromeliads - pots			
2002	14	221	890
2003	12	117	461
2004	11	131	583
2005	14	126	580
2006	10	140	648
Chrysanthemums - pots			
2002	5	150	652
2003	5	108	497
2004	5	93	468
2005 ⁷			
2006 ⁷			
Poinsettias - pots			
2002	31	382	1,551
2003	31	344	1,351
2004	30	327	1,409
2005	31	360	1,644
2006	29	331	1,525
Other potted flowering plants			
2002	31	NA	3,208
2003	29	NA	2,450
2004	21	NA	2,661
2005	31	NA	3,505
2006	27	NA	3,693
POTTED BEDDING/GARDEN			
Impatiens, New Guinea			
2002	11	121	172
2003	11	132	217
2004	14	139	223
2005	13	132	213
2006	10	162	292
Impatiens, other			
2002	12	268	145
2003	12	444	304
2004	13	440	303
2005	15	286	176
2006	11	254	146

See footnotes at end of table.

Continued



FLORICULTURE AND NURSERY PRODUCTS

FLORICULTURE AND NURSERY PRODUCTS: Number of farms, quantity, and value, State of Hawaii, 2002-2006 ¹ -- Continued

Crop	Farms having sales ²	Quantity sold	Value of sales
	<i>Number</i>	<i>1,000</i>	<i>1,000 dollars</i>
Other bedding/garden			
2002	29	NA	3,474
2003	29	NA	3,269
2004	31	NA	3,137
2005	26	NA	2,551
2006	24	NA	2,828
PLANT RENTALS			
2002	47	NA	3,801
2003	37	NA	2,959
2004	45	NA	3,385
2005	43	NA	4,931
2006	41	NA	5,126
LANDSCAPE PLANTS ⁸			
2002	117		17,150
2003	125		18,653
2004	128		19,219
2005	154		20,887
2006	139		20,853
OTHER NURSERY PRODUCTS ⁹			
2002			4,827
2003			4,989
2004			4,581
2005			5,038
2006			5,753
UNSPECIFIED SALES ¹⁰			
2002			1,300
2003			1,355
2004			1,335
2005			1,470
2006			1,450
TOTAL			
2002	870		95,715
2003	865		95,601
2004	920		95,178
2005	955		100,962
2006	930		100,689

NA = Not available. ¹ Beginning 1992, includes only producers having total sales of \$10,000 or more. ² Number for each individual flower item is a count of those having sales of that item during each year; "Total" is unduplicated count. ³ Includes cattleyas, vanda hybrids, phalaenopsis, paphiopedilums, and others. ⁴ Includes in bud/bloom and community pots. ⁵ Prior to 2004, included with "Other potted orchids". ⁶ Included with "Other lei/individual". ⁷ Included with "Other potted flowering plants." ⁸ Includes broadleaf and coniferous evergreens, deciduous and flower trees, palms, citrus, fruit and nut trees, and sod. Does not include palms or potted foliage for indoor or patio use, bedding and garden plants, propagative floriculture material, and items which are included in published categories. ⁹ Includes other flowers or nursery products not elsewhere classified. ¹⁰ Beginning 1992, includes sales of growers greater than \$999 but less than \$10,000 which were not categorized.



FLORICULTURE AND NURSERY PRODUCTS: Number of farms and growing area, by county, 2002-2006

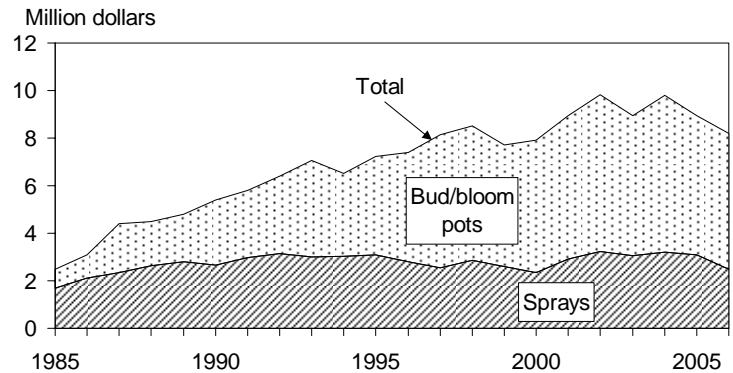
Year	Farms	Greenhouse ¹	Artificial shade	Natural shade	Open field	Total area
	<i>Number</i>	<i>----- 1,000 square feet -----</i>			<i>----- Acres -----</i>	
State						
2002	870	3,030	30,415	10	2,870	3,648
2003	865	2,540	27,465	16	3,185	3,890
2004	920	2,620	26,560	0	3,160	3,830
2005	955	2,095	27,015	0	3,320	3,988
2006	930	2,180	25,115	0	3,425	4,052
County:						
Hawaii						
2002	420	2,210	24,125	10	1,565	2,180
2003	395	1,895	21,295	16	1,860	2,408
2004	425	1,990	20,840	0	1,880	2,404
2005	425	1,445	20,980	0	1,940	2,455
2006	410	1,450	19,875	0	2,090	2,580
Honolulu						
2002	230	330	5,055	0	585	709
2003	230	230	5,035	0	580	701
2004	235	255	4,660	0	525	638
2005	265	275	4,715	0	660	774
2006	250	255	3,985	0	610	707
Kauai						
2002	65	90	495	0	180	193
2003	80	65	360	0	170	180
2004	80	90	310	0	225	234
2005	80	110	525	0	195	210
2006	75	205	530	0	215	232
Maui						
2002	155	400	740	0	540	566
2003	160	350	775	0	575	601
2004	180	285	750	0	530	554
2005	185	265	795	0	525	549
2006	195	270	725	0	510	533

¹ Glass or glass substitute structure.



FLORICULTURE AND NURSERY PRODUCTS

DENDROBIUMS: Value of Sales, State of Hawaii, 1985-2006 ¹



DENDROBIUM ORCHIDS: Sales and value, State of Hawaii, 2002-2006 ¹

Year	Individual blossoms		Cut sprays		Potted plants				Total value
					In bud/bloom		Community pots		
	Number sold	Value	Number sold	Value	Number sold	Value	Number sold	Value	
	<i>Million blossoms</i>	<i>1,000 dollars</i>	<i>1,000 dozens</i>	<i>1,000 dollars</i>	<i>1,000 pots</i>	<i>1,000 dollars</i>	<i>1,000 pots</i>	<i>----- 1,000 dollars -----</i>	
2002	29.3	908	462	3,218	1,229	6,624	125	694	11,444
2003	25.7	847	410	3,069	1,040	5,866	56	288	10,070
2004	18.1	580	453	3,194	1,222	6,599	14	80	10,453
2005	17.3	588	391	3,078	1,103	5,879	39	177	9,722
2006	14.8	532	309	2,481	1,117	5,708	10	60	9,781

¹ Includes only producers with total sales of \$10,000 or more.

DENDROBIUM ORCHIDS (POTTED IN BUD/BLOOM AND CUT SPRAYS): Number of farms and production area, State of Hawaii, 2002-2006 ¹

Year	Farms		Production area		
	Cut sprays	Potted in bud/bloom	Cut sprays	Potted in bud/bloom	Total
	----- Number -----		----- 1,000 square feet -----		
2002	54	71	3,595	2,720	6,315
2003	50	69	3,005	2,205	5,210
2004	50	75	3,015	2,225	5,240
2005	48	72	3,315	2,355	5,670
2006	43	72	2,780	2,405	5,185

¹ Data includes only producers with \$10,000 or more in total sales.

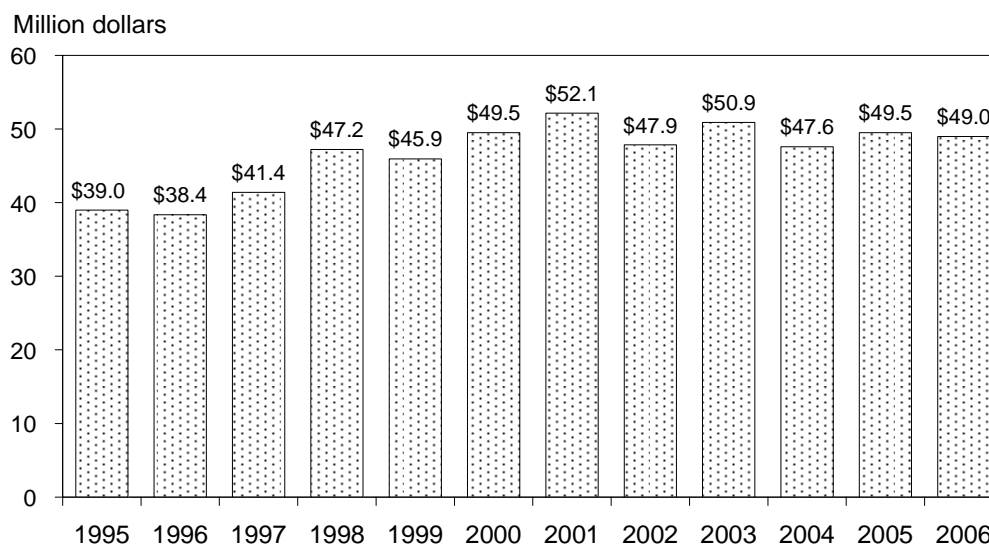


FLORICULTURE AND NURSERY PRODUCTS: Out-of-State sales, State of Hawaii, 2002-2006 ¹

Commodity	2002	2003	2004	2005	2006
<i>1,000 dollars</i>					
Anthuriums, cut	7,700	8,500	6,475	6,210	7,070
Birds of Paradise	840	700	540	530	510
Cymbidiums, cut	140	140	135	140	135
Dendrobiums, sprays	3,400	3,600	3,900	3,900	3,100
Oncidiums, sprays	500	610	505	470	580
Foliage, cut:					
Ti leaves	680	840	640	650	700
Other cut greens	1,520	1,600	1,400	1,200	1,400
Foliage, potted	10,700	11,000	11,300	13,200	11,600
Ginger, red	600	645	810	680	630
Ginger, other	490	540	670	550	520
Heliconias	1,040	1,200	1,200	1,000	1,100
Potted orchids:					
Dendrobiums	4,510	4,590	4,645	4,335	3,760
Oncidiums			2,775	2,430	1,250
Phalaenopsis	750	930	765	530	480
Other potted orchids	9,130	9,730	5,610	7,805	9,285
Proteas	1,620	1,800	1,715	2,000	1,900
Mixed assortment of cut flowers	1,240	1,730	1,100	1,600	2,900
All other flowers and nursery products	3,010	2,785	3,400	2,300	2,100
Total	47,870	50,940	47,585	49,530	49,020

¹ Based on F.O.B. island value. Includes both wholesale and retail sales. Does not include sales of cut flowers, potted plants, leis, etc., purchased within the State and hand carried out.

FLORICULTURE & NURSERY PRODUCTS: Out-of-State Sales, State of Hawaii, 1995-2006 ¹



¹ Includes wholesale and retail sales.



Total value for Hawaii fruit growers fell 3 percent to \$101.7 million, with guava, lemon, papaya, pineapple, and the tropical specialty group recording declines in value of sales. Fruit acreage totaled 19,740 acres, a 2 percent decrease from 2005. Almost continuous rainfall from late February through March contributed to losses in some crops due to soil erosion, flooding, disease outbreaks, and fruit and tree losses. The lengthy rainy period slowed fruit maturation in some crops.

◆ **Banana**

Total banana acreage rose 5 percent in 2006 while harvested acreage increased 2 percent to 1,000 acres. Utilized production was pegged at 20.0 million pounds, 4 percent less than 2005. However, higher average prices helped push total value of sales to \$9.8 million, 7 percent higher than the previous year.

◆ **Guava**

Total guava production area declined 14 percent to 575 acres in 2006 while area harvested declined 41 percent to 365 acres. Value of sales declined 7 percent to \$1.1 million. Hawaii's guavas, which are mainly for the processed market, recorded a 2

percent increase in price. However, this was not enough to offset the 9 percent lower output.

◆ **Papaya**

The State's papaya producers devoted 2,095 acres toward papaya production, a decrease of 13 percent from the previous year. Harvested area totaled 1,530 acres, 3 percent more than 2005. Papaya output declined 13 percent to 28.7 million pounds while value of sales dropped 2 percent to \$11.0 million.

◆ **Pineapple**

Still Hawaii's largest fruit commodity, pineapple represented 71 percent of total fruit acreage and 74 percent of the total fruit value. Total utilized pineapple production fell 11 percent to 376 million pounds (188,000 tons). Since records were kept by the Hawaii Field Office, 2006 was the first year fresh market utilization outweighed processed utilization. Also establishing a record was the average farm price. In late 2006, operations ended prematurely for one major company which had previously announced their phase-out of pineapple production.

◆ **Tropical Specialty Fruit**

Area devoted to tropical specialty fruit totaled 1,240 acres in 2006, 2 percent less than 2005. Area harvested totaled 690 acres, 5 percent lower than the previous year. Hawaii's growers of tropical specialty fruit produced and sold an estimated 1.45 million pounds of fruit in 2006, relatively unchanged from 2005. Compared with 2005, higher output was registered for longan, lychee, mango, and persimmon. Value of sales was pegged at \$2.6 million in 2006, 4 percent lower than 2005.

MARKET SUPPLY: FRESH FRUITS



MARKET SUPPLY: Fresh market fruits, State of Hawaii, 2002-2006^{1 2}

Commodity		2002	2003	2004	2005	2006	Hawaii market share 2006
----- 1,000 pounds -----							Percent
Apples:	Inshipments	14,672	13,448	13,392	15,320	15,431	
Avocados:	Inshipments	1,292	1,579	1,780	2,130	2,349	
	Hawaii	700	760	740	800	880	27
Bananas:	Inshipments	8,377	8,297	13,929	13,017	15,408	
	Hawaii	20,000	22,500	16,500	20,900	20,000	56
Cantaloupe melons:	Inshipments	7,293	7,225	6,149	7,658	7,736	
	Hawaii ³						
Grapefruit:	Inshipments	1,906	1,693	1,719	1,488	1,561	
	Hawaii	₃	₃	₃	40	50	3
Grapes:	Inshipments	8,681	7,580	8,360	9,831	9,506	
Honeydew melons:	Inshipments	2,629	2,488	2,773	2,570	3,813	
	Hawaii ³						
Lemons:	Inshipments	3,755	3,841	3,915	4,196	4,154	
	Hawaii	₃	₃	₃	54	45	1
Limes:	Inshipments	1,241	1,365	1,456	1,678	1,749	
	Hawaii	₃	₃	₃	59	125	7
Nectarines:	Inshipments	2,489	2,264	2,593	2,260	2,219	
Oranges:	Inshipments	13,336	14,069	13,683	15,740	14,824	
	Hawaii ³						
Papayas:	Inshipments		3	3	3	3	
	Hawaii ⁴	21,490	21,965	20,400	18,755	16,740	
Pears:	Inshipments	4,956	4,397	5,109	3,971	4,873	
Pineapples:	Hawaii	37,200	31,700	30,900	5	5	
Tangerines:	Inshipments	854	1,198	902	1,254	1,893	
	Hawaii	₃	₃	₃	51	90	5
Watermelons:	Inshipments	2,820	2,602	3,165	3,946	5,174	
	Hawaii	11,300	11,900	10,100	11,300	10,400	67
All other fruits:	Inshipments	12,657	14,580	13,148	15,507	16,382	
	Hawaii	9,907	7,513	4,697	5,601	7,621	32
Unspecified fruits:	Inshipments ⁶	6,112	5,850	8,362	7,391	9,817	
Total:	Inshipments	93,070	92,476	100,435	107,957	116,889	
	Hawaii	100,597	96,338	73,337	57,560	55,951	32
	All	193,667	188,814	173,772	165,517	172,840	

¹ Excludes pineapples, guavas, papayas, and passion fruit used for processing, and quantities shipped out-of-State.

² Inshipment data was provided by the Market Analysis and News Branch of the State Department of Agriculture.

³ Data not shown separately to avoid disclosure of individual operations but combined and included with "All other fruits".

⁴ Fresh intrastate sales only. Excludes mainland and foreign fresh sales.

⁵ Data not available.

⁶ Fruit data received without commodity names specified.



TROPICAL SPECIALTY FRUITS

TROPICAL SPECIALTY FRUITS: Number of farms, acreage, number of trees, production, price, and value, State of Hawaii, 2002-2006 ¹

Crop	Farms ²	Acreage		Number of trees		Utilized production ³	Farm price ^{3 4}	Value of sales
		In crop	Harvested	Total	Bearing			
	<i>Number</i>	<i>----- Acres -----</i>				<i>1,000 pounds</i>	<i>Dollars per pound</i>	<i>1,000 dollars</i>
Atemoya ⁵								
2002								
2003								
2004	25	15	10	600	500	5	1.40	7
2005	20	15	5	800	200	17	1.35	23
2006	25	10	5	400	300	13	1.31	17
Longan								
2002	40	120	35	6,600	1,900	46	3.20	147
2003	65	145	75	7,300	3,300	114	3.33	380
2004	65	210	75	8,700	3,500	121	3.41	413
2005	65	185	85	8,700	4,000	141	3.09	436
2006	65	155	75	7,000	3,500	190	3.46	657
Lychee								
2002	90	330	95	15,500	5,000	77	2.64	203
2003	110	370	80	16,500	3,200	88	2.84	250
2004	125	260	115	11,200	5,500	102	2.42	247
2005	125	310	185	9,900	5,400	117	2.66	311
2006	120	285	120	10,700	4,600	154	2.94	453
Mango								
2002	80	260	200	10,700	7,100	377	.92	348
2003	85	260	200	10,700	7,400	481	.86	414
2004	110	270	195	10,200	7,700	391	.92	358
2005	100	300	190	14,000	8,900	531	1.11	589
2006	100	350	255	12,700	9,700	699	1.10	769
Persimmon ⁵								
2002								
2003								
2004	20	20	15	1,400	1,100	49	1.57	77
2005	20	25	20	1,400	1,200	51	1.63	83
2006	20	25	25	1,700	1,600	90	1.57	141
Rambutan								
2002	55	270	145	13,200	6,800	257	3.01	773
2003	60	270	185	12,900	8,500	306	2.73	834
2004	75	285	185	12,500	8,300	278	2.60	723
2005	65	250	175	11,100	7,900	395	2.51	990
2006	60	250	140	11,100	6,300	106	2.75	292
Starfruit								
2002	50	25	15	2,100	1,800	63	1.51	95
2003	50	30	7	2,700	800	24	1.58	38
2004 ⁶								
2005 ⁶								
2006 ⁶								

See footnotes at end of table.

Continued



TROPICAL SPECIALTY FRUITS: Number of farms, acreage, number of trees, production, price, and value, State of Hawaii, 2002-2006¹ -- Continued

Crop	Farms ²	Acreage		Number of trees		Utilized production ³	Farm price ^{3,4}	Value of sales
		In crop	Harvested	Total	Bearing			
	<i>Number</i>	<i>----- Acres -----</i>				<i>1,000 pounds</i>	<i>Dollars per pound</i>	<i>1,000 dollars</i>
Other								
2002	--	165	70	10,900	4,800	142	--	194
2003	--	185	53	15,300	4,600	141	--	212
2004	--	160	45	7	7	95	--	120
2005	--	185	70	7	7	204	--	298
2006	--	165	70	7	7	200	--	284
Total								
2002	160	1,170	560	59,000	27,400	962	--	1,760
2003	170	1,260	600	65,400	27,800	1,154	--	2,128
2004	220	1,220	640	7	7	1,041	--	1,945
2005	265	1,270	730	7	7	1,456	--	2,730
2006	265	1,240	690	7	7	1,452	--	2,613

-- = Not applicable. ¹ Tropical specialty fruits include: abiu, atemoya, breadfruit, caimito, canistel, cherimoya, durian, jaboticaba, jackfruit, langsat, longan, loquat, lychee, mango, mangosteen, persimmon, poha, rambutan, rollina, sapodilla, soursop, starfruit, white sapote, and other fruits. If not shown separately, then combined and included in "Other" category. ² A farm may grow more than one type of fruit. Total farms is an unduplicated count; excludes home use. ³ Includes fresh and processed utilization when applicable. ⁴ Beginning 2001, price shown reflects average prices received as sold by farmers (loose, packed, etc.), excluding any value added through processing. Prior to 2001, prices for fresh sales were adjusted to prepicked equivalent. ⁵ Prior to 2004, included with "Other". ⁶ Data not shown separately to avoid disclosure of individual operations but combined and included with "Other". ⁷ Beginning 2004, data series discontinued.



PINEAPPLES

PINEAPPLES: Number of farms, acreage, production, disposition, price, and value, State of Hawaii, 2002-2006

Year	Farms ¹	Acreage used for crop	Production (fresh weight)	Disposition		Farm price		Value of production (fresh weight)
				Processed (fresh weight)	Fresh market	Processed ²	Fresh market ³	
	<i>Number</i>	<i>1,000 acres</i>		<i>1,000 tons</i>		<i>Dollars per ton</i>		<i>1,000 dollars</i>
2002	25	19.1	320	203	117	136	624	100,616
2003	25	16.0	300	170	130	135	604	101,470
2004	30	13.0	220	116	104	148	634	83,104
2005	30	14.0	212	106	106	148	600	79,288
2006	30	13.9	188	89	99	148	630	75,542

¹ Includes large and small pineapple growers statewide.

² Estimate to reflect value of fresh fruit delivered processing plant door based on average contract prices of independent growers.

³ Estimate to reflect value at wholesale establishments for local sales and shipper dock for mainland and foreign sales.

PINEAPPLES: Fresh market sales, processed value, and total value, State of Hawaii, 2002-2006

Year	Fresh market sales ¹		Processor value of canned fruit and juice production ³	Total value: Fresh market and processed ⁴
	Quantity	Value ²		
	----- 1,000 tons -----		----- Million dollars -----	
2002	117	73.0	71.0	144.0
2003	130	78.5	64.4	142.9
2004	104	65.9	57.3	123.2
2005	106	63.6	49.8	113.4
2006	99	62.4	5	5

¹ Includes "fresh cut".

² Prior to 2005, value FAS shipping point for outshipments, delivered wholesalers local sales.

³ Value of canned fruit and juices and by-product shipped out-of-State and sold within State.

⁴ Prior to 2004, source Pineapple Growers Association of Hawaii.

⁵ Data not available.

PINEAPPLES: Outshipments of fresh pineapples, State of Hawaii, 2002-2006

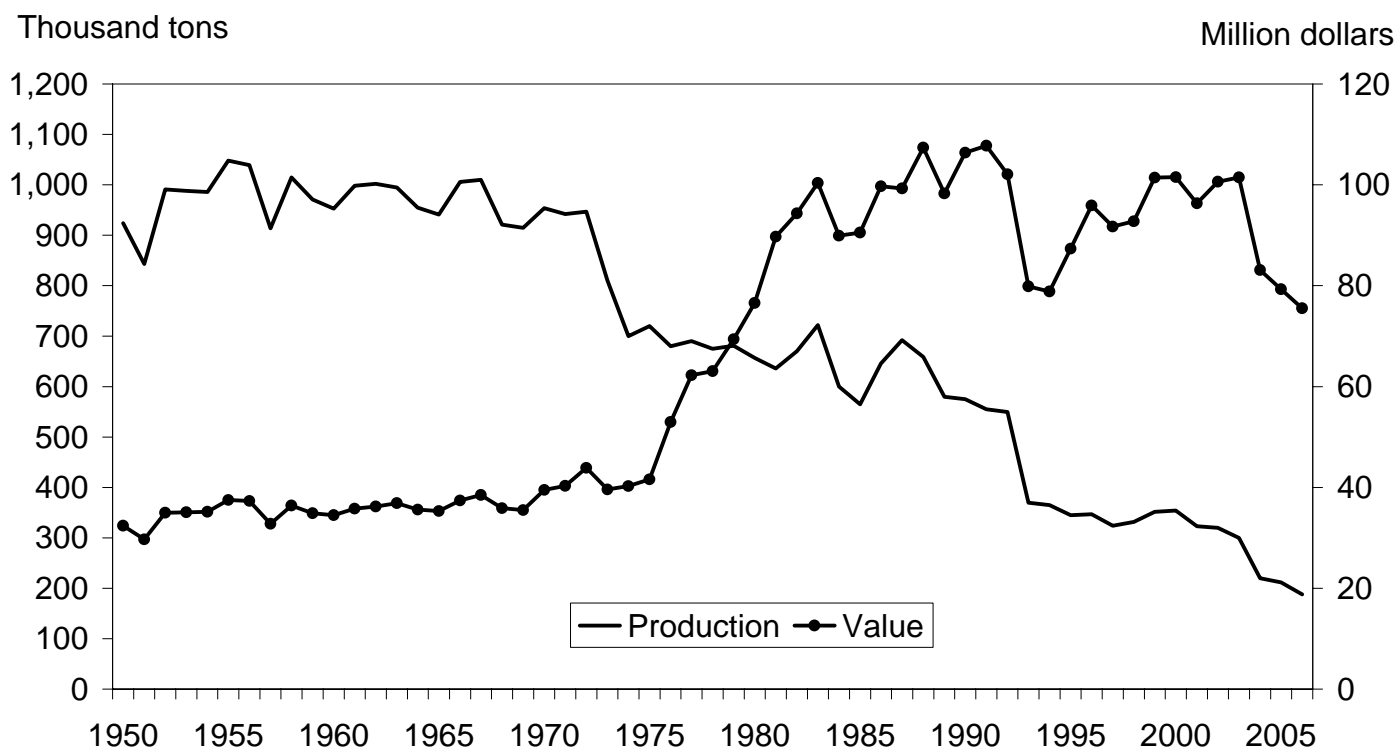
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
	<i>1,000 Pounds</i>												
2002	14,978	11,978	16,610	16,898	20,524	20,126	20,448	13,534	14,044	15,032	16,997	15,574	196,744
2003	13,692	13,142	20,374	19,963	21,637	20,434	24,650	22,079	15,024	15,477	22,131	19,712	228,315
2004	14,248	18,579	14,840	11,483	13,574	12,936	20,418	10,917	12,045	17,518	13,616	16,889	177,063
2005 ¹													
2006¹													

¹ Data not available.

Source of outshipment data: Market Analysis and News Branch of the State Department of Agriculture.



PINEAPPLES: Production and Value, State of Hawaii, 1950-2006



AVOCADOS: Number of farms, acreage, yield, production, price, and value, State of Hawaii, 2002-2006

State of Hawaii, 2002-2006							
Year	Farms	Acreage ¹		Yield per acre ²	Production	Farm price	Value of sales
		In crop	Bearing				
	<i>Number</i>	<i>----- Acres -----</i>		<i>----- 1,000 pounds -----</i>		<i>Cents per pound</i>	<i>1,000 dollars</i>
2002	140	370	250	2.8	700	56.0	392
2003	150	390	300	2.5	760	62.0	471
2004	150	380	270	2.7	740	63.0	466
2005	175	390	300	2.7	800	66.0	528
2006	225	380	280	3.1	880	68.0	598

¹ At end of year.

² Production divided by bearing acreage.



BANANAS

BANANAS: Number of farms, acreage, yield, production, price, and value, by county, 2002-2006

Year	Farms	Acreage		Yield per acre ²	Utilized production	Farm price	Value of sales
		In crop ¹	Harvested				
<i>Number</i>		<i>----- Acres -----</i>		<i>----- 1,000 pounds -----</i>		<i>Cents per pound</i>	<i>1,000 dollars</i>
State³							
2002	220	1,510	1,330	15.0	20,000	43.0	8,600
2003	230	1,560	1,350	16.7	22,500	41.0	9,225
2004	210	1,360	1,000	16.5	16,500	49.0	8,085
2005	190	1,145	980	21.3	20,900	43.9	9,175
2006	200	1,200	1,000	20.0	20,000	49.0	9,800
County:							
Hawaii							
2002	55	825	740	20.7	15,300	42.0	6,431
2003 ⁴							
2004 ⁴							
2005 ⁴							
2006⁴							
Honolulu							
2002	75	500	450	7.6	3,400	44.0	1,502
2003 ⁴							
2004 ⁴							
2005 ⁴							
2006⁴							
Kauai							
2002	50	90	70	9.3	650	45.0	293
2003 ⁴							
2004 ⁴							
2005 ⁴							
2006⁴							
Maui							
2002	40	95	70	9.3	650	57.5	374
2003 ⁴							
2004 ⁴							
2005 ⁴							
2006⁴							

¹ Beginning 2003, total acreage reflects calendar (January-December) year. Prior years, total acreage measured as of February in the following year, i.e., acreage data for 2002 is as of February 1, 2003.

² Utilized production divided by acreage harvested.

³ Sum of county estimates may not add to State total due to rounding.

⁴ Data not available.


BANANAS: Production, acreage, and price, State of Hawaii, 2002-2006

Year	Fresh utilization ¹													Acreage	
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average	In crop	Harvested

----- 1,000 pounds -----

----- Acres -----

All Bananas

2002	1,480	1,355	1,500	1,450	1,525	1,855	1,780	2,065	1,745	1,770	1,685	1,790	20,000	1,510	1,330
2003	2	2	2	2	2	2	2	2	2	2	2	2	22,500	1,560	1,350
2004	2	2	2	2	2	2	2	2	2	2	2	2	16,500	1,360	1,000
2005	2	2	2	2	2	2	2	2	2	2	2	2	20,900	1,145	980
2006	2	2	2	2	2	2	2	2	2	2	2	2	20,000	1,200	1,000

Hawaii Apple³

2002	520	475	520	475	510	510	555	485	485	495	465	505	6,000	770	630
2003 ²															
2004 ²															
2005 ²															
2006²															

Cavendish and others⁴

2002	960	880	980	975	1,015	1,345	1,225	1,580	1,260	1,275	1,220	1,285	14,000	740	700
2003 ²															
2004 ²															
2005 ²															
2006²															

Farm price for fresh market

Cents per pound

All Bananas⁵

2002	43.0	45.0	45.0	44.5	46.0	42.5	41.5	39.0	41.5	43.5	43.5	42.5	43.0
2003	2	2	2	2	2	2	2	2	2	2	2	2	41.0
2004	2	2	2	2	2	2	2	2	2	2	2	2	49.0
2005	2	2	2	2	2	2	2	2	2	2	2	2	43.9
2006	2	2	2	2	2	2	2	2	2	2	2	2	49.0

Hawaii Apple³

2002	49.5	50.5	49.5	49.0	50.5	51.0	51.0	50.5	51.5	51.5	51.5	49.5	50.5
2003 ²													
2004 ²													
2005 ²													
2006²													

Cavendish⁶

2002	39.5	41.5	42.5	42.5	43.5	39.5	37.0	35.5	38.0	40.5	40.0	40.0	39.5
2003 ²													
2004 ²													
2005 ²													
2006²													

¹ Monthly production rounded to the nearest 5,000 pounds beginning 2001. ² Data not available. ³ Includes Dwarf Hawaii Apple and Apple bananas, formerly called Brazilian. ⁴ Includes Chinese, Williams, Valery, Grand Nain, Bluefields, Dwarf Bluefields, and other bananas. ⁵ Includes Bluefields, Dwarf Bluefields, and other bananas. ⁶ Includes Chinese, Williams, Valery, and Grand Nain.



PAPAYAS: Number of farms, acreage, yield, utilization, price, and value, by county, 2002-2006

Year	Farms	Acreage ¹		Yield per acre ²	Utilized production	Utilization		Price per pound			Value of utilized production
		In crop	Harvested			Fresh	Processed	Fresh	Processed ³	All	
<i>Number ----- Acres ----- ----- 1,000 pounds ----- ----- Cents ----- 1,000 dollars</i>											
State⁴											
2002	164	2,320	1,720	26.7	45,900	42,700	3,200	27.7	3.0	26.0	11,924
2003	163	2,240	1,565	27.2	42,600	40,800	1,800	31.9	3.0	30.7	13,069
2004	207	2,105	1,235	29.0	35,800	34,100	1,700	36.1	3.0	34.5	12,361
2005	207	2,395	1,480	22.2	32,900	30,700	2,200	36.4	3.0	34.2	11,241
2006	170	2,095	1,530	18.8	28,700	26,600	2,100	41.3	3.0	38.5	11,049
County:											
Hawaii											
2002	122	2,050	1,540	25.4	39,080	35,880	⁵ 3,200	25.2		23.4	9,135
2003	124	2,000	1,420	26.4	37,535	35,735	⁵ 1,800	30.8		29.4	11,045
2004	141	1,910	1,080	29.3	31,695	29,995	⁵ 1,700	35.2		33.5	10,611
2005	154	2,170	1,315	22.1	29,110	26,910	⁵ 2,200	35.1		32.7	9,521
2006	125	1,905	1,395	18.8	26,190	24,090	⁵ 2,100	40.0		37.0	9,692
Honolulu											
2002	21	155	110	45.5	5,005	5,005	⁵	40.0		40.0	2,002
2003	17	120	80	45.0	3,600	3,600	⁵	39.8		39.8	1,433
2004	27	95	90	29.2	2,630	2,630	⁵	44.0		44.0	1,157
2005	30	130	105	21.4	2,250	2,250	⁵	44.2		44.2	995
2006	⁶ 45	⁶ 190	⁶ 135	⁶ 18.6	⁶ 2,510	⁶ 2,510	⁵	⁶ 54.1		⁶ 54.1	⁶ 1,357
Kauai											
2002	13	70	50	22.2	1,110	1,110	⁵	⁷ 43.4		⁷ 43.4	⁷ 787
2003	15	55	35	18.3	640	640	⁵	⁷ 40.3		⁷ 40.3	⁷ 591
2004	19	40	30	18.0	540	540	⁵	⁷ 40.2		⁷ 40.2	⁷ 593
2005	11	35	25	18.4	460	460	⁵	⁷ 47.1		⁷ 47.1	⁷ 725
2006	⁶	⁶	⁶	⁶	⁶	⁶	⁵	⁶		⁶	⁶
Maui											
2002	8	45	20	35.3	705	705	⁵	⁷		⁷	⁷
2003	7	65	30	27.5	825	825	⁵	⁷		⁷	⁷
2004	20	60	35	26.7	935	935	⁵	⁷		⁷	⁷
2005	12	60	35	30.9	1,080	1,080	⁵	⁷		⁷	⁷
2006	⁶	⁶	⁶	⁶	⁶	⁶	⁵	⁶		⁶	⁶

¹ Average of monthly estimates.

² Utilized production divided by acreage harvested.

³ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

⁴ Sum of county estimates may not add to State total due to rounding.

⁵ Maui, Kauai, and Honolulu combined with Hawaii to avoid disclosure of individual operations.

⁶ Maui and Kauai combined with Honolulu to avoid disclosure of individual operations.

⁷ Maui combined with Kauai to avoid disclosure of individual operations.



PAPAYAS: Acreage, utilization, outshipments, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres ¹													
2002	1,830	1,925	1,930	1,935	1,935	1,725	1,680	1,610	1,500	1,500	1,490	1,580	1,720
2003	1,505	1,510	1,515	1,735	1,740	1,575	1,565	1,565	1,565	1,575	1,580	1,350	1,565
2004	1,340	1,345	1,160	1,160	1,160	1,055	1,060	1,050	1,370	1,365	1,360	1,400	1,235
2005	1,410	1,410	1,435	1,440	1,440	1,580	1,570	1,435	1,445	1,415	1,405	1,780	1,480
2006	1,790	1,795	1,785	1,785	1,760	1,510	1,510	1,330	1,325	1,320	1,315	1,135	1,530
Utilization (fresh and processed) – 1,000 pounds													
2002	3,445	3,450	3,540	3,320	3,615	3,620	4,245	4,655	3,705	4,165	4,285	3,855	45,900
2003	4,040	3,840	4,320	3,575	3,115	3,095	3,640	3,585	3,380	3,590	3,285	3,135	42,600
2004	3,690	2,870	2,930	2,725	2,670	3,135	2,915	2,715	2,845	3,425	2,850	3,030	35,800
2005	2,810	2,645	2,875	2,815	3,000	2,740	2,945	2,540	2,810	2,935	2,135	2,650	32,900
2006	3,145	2,370	2,340	1,880	2,020	2,380	1,905	2,340	2,855	2,390	2,665	2,410	28,700
Total fresh papaya utilization – 1,000 pounds													
2002	3,345	3,310	3,375	2,995	3,210	3,285	3,915	3,745	3,585	4,035	4,135	3,765	42,700
2003	3,935	3,735	4,215	3,485	3,040	3,030	3,425	3,240	3,025	3,450	3,105	3,115	40,800
2004	3,560	2,775	2,815	2,630	2,460	2,920	2,750	2,630	2,725	3,225	2,650	2,960	34,100
2005	2,580	2,425	2,715	2,700	2,740	2,595	2,745	2,360	2,665	2,605	2,020	2,550	30,700
2006	2,920	2,240	2,210	1,725	1,785	2,095	1,705	2,215	2,615	2,185	2,605	2,300	26,600
Intrastate fresh papaya utilization – 1,000 pounds													
2002	1,860	1,670	1,885	1,655	1,770	1,825	1,795	1,735	1,665	1,990	1,885	1,755	21,490
2003	1,765	1,745	1,990	1,965	1,725	1,655	1,915	1,910	1,495	2,040	1,895	1,865	21,965
2004	2,130	1,595	1,710	1,585	1,475	1,725	1,640	1,525	1,570	2,045	1,560	1,840	20,400
2005	1,545	1,510	1,780	1,680	1,525	1,590	1,625	1,455	1,575	1,630	1,295	1,545	18,755
2006	1,730	1,450	1,315	1,065	1,120	1,285	1,050	1,400	1,730	1,375	1,705	1,515	16,740
Outshipments of fresh papaya – 1,000 pounds													
2002	1,485	1,640	1,490	1,340	1,440	1,460	2,120	2,010	1,920	2,045	2,250	2,010	21,210
2003	2,170	1,990	2,225	1,520	1,315	1,375	1,510	1,330	1,530	1,410	1,210	1,250	18,835
2004	1,430	1,180	1,105	1,045	985	1,195	1,110	1,105	1,155	1,180	1,090	1,120	13,700
2005	1,035	915	935	1,020	1,215	1,005	1,120	905	1,090	975	725	1,005	11,945
2006	1,190	790	895	660	665	810	655	815	885	810	900	785	9,860
Farm price for fresh market sales (to all markets) – cents per pound													
2002	29.4	29.5	28.3	30.2	30.4	28.3	27.9	27.5	26.9	24.9	25.3	26.1	27.7
2003	30.7	32.6	32.8	34.1	33.8	35.0	31.8	30.1	31.1	31.6	29.6	30.8	31.9
2004	31.0	31.2	37.4	40.0	41.0	39.5	37.2	36.6	37.2	35.8	34.3	33.4	36.1
2005	33.0	37.4	40.0	37.6	37.0	37.2	36.2	36.5	34.3	33.2	37.1	36.9	36.4
2006	34.1	36.5	42.1	46.3	51.5	47.1	47.0	48.1	38.6	38.1	38.3	36.4	41.3

¹ Total is average of monthly data.



GUAVAS: Number of farms, acreage, farm production, price, and value, by county, 2002-2006

Year	Farm production					
	Farms	Acreage		Utilized production	Farm price ²	Value of sales
		In crop ¹	Harvested			
	<i>Number</i>	<i>----- Acres -----</i>		<i>1,000 pounds</i>	<i>Cents per pound</i>	<i>1,000 dollars</i>
State						
2002	85	640	550	9,700	15.0	1,455
2003	75	610	530	6,700	13.8	925
2004	75	610	525	8,100	14.4	1,166
2005	55	665	620	8,100	13.9	1,126
2006	50	575	365	7,400	14.2	1,051
County:						
Hawaii						
2002	80	200	110	3	3	3
2003	65	160	85	3	3	3
2004	65	160	⁴ 85	3	3	3
2005	45	215	175	3	3	3
2006	40	125	100	3	3	3
Honolulu/Kauai/Maui ⁵						
2002	5	440	440	3	3	3
2003	10	450	445	3	3	3
2004	10	450	440	3	3	3
2005	10	450	445	3	3	3
2006	10	450	265	3	3	3

¹ Includes planting intentions for year 2001-2002.

² State average grower price. Equivalent F.O.B. plant, county of production.

³ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

⁴ Revised.

⁵ Kauai and Maui combined with Honolulu to avoid disclosure of individual operations.

GUAVAS: Farm production, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
<i>1,000 pounds</i>													
2002	693	507	425	525	514	1,016	497	228	832	1,868	1,820	775	9,700
2003	240	292	904	508	433	587	639	395	1,041	764	640	257	6,700
2004	211	310	359	398	405	271	477	1,457	1,985	1,111	550	566	8,100
2005	246	233	198	256	371	498	665	756	1,318	1,746	901	912	8,100
2006	202	164	162	188	227	429	625	802	1,272	1,570	934	825	7,400



♦ Vegetables and Melons

The farm value of Hawaii's vegetables and melons is estimated at a record high \$60.2 million in 2006, up 11 percent from the previous record high set in 2005. Production was up fractionally, but an overall increase in farm prices ensured 2006's record revenues.

Weather conditions were mixed during 2006. The year began dry, but quickly turned wet for an extended period of time. Much of the remaining year had a mixture of wet and dry periods, before the year ended on a dry note. A series of unstable weather conditions produced periods of heavy rainfall between February 19 and April 2. This was the result of a blocking weather pattern which formed in place south of Alaska that helped to keep a series of low pressure systems anchored to the northwest of the State producing the unstable conditions and subsequent heavy precipitations. Although the wet weather slowed crop progress and hampered farm activities during this period and for at least a month afterwards, most vegetable and melon growers benefited from the more ideal weather conditions which followed.

Hawaii's tomato farms (field and greenhouse types) experienced a 16 percent increase in farm revenues during 2006, and continued to lead all other vegetable and melon commodities with \$11.3 million in farm revenues or 19 percent of the overall total. The increase in revenue was due to a 4 percent increase in production coupled with a 12 percent increase in farm prices. Ranking second was sweetpotatoes which posted \$4.4 million in farm revenues during 2006, up 16 percent from 2005. A 21 percent increase in farm prices more than offset the 5 percent decrease in production.



♦ Taro

Hawaii taro production is estimated at 4.5 million pounds in 2006, up 5 percent from the previous year estimate of 4.3 million. Farm prices increased 6 percent to an average of 57 cents per pound, and value of sales was estimated at \$2.6 million, up 10 percent from 2005.

Taro production was once again hampered by a combination of wet weather and pests during 2006. This year began drier than normal, but quickly turned very wet. The northern islands experienced heavy rainfall during February with record amounts and flooding affecting most of the State during March. The beginning of April finally marked the end of six weeks of heavy rainfall. The remainder of the year was a mix of drier than normal weather and occasional periods of heavy rains. Reports of apple snail (*Pomacea canaliculata*) infestations and losses varied from light to heavy. Taro Pocket Rot (TPR), a disease that forms pickets of rotting tissue in the corm, also continued to result in some losses.



MARKET SUPPLY: FRESH VEGETABLES

MARKET SUPPLY: Fresh market vegetables, State of Hawaii, 2002-2006 ¹

Commodity		2002	2003	2004	2005	2006	Hawaii market share 2006
		----- 1,000 pounds -----					Percent
Beans, snap:	Inshipments	502	411	531	619	592	
	Hawaii	900	1,000	900	700	600	50
Bittermelon:	Inshipments	38	52	66	149	108	
	Hawaii	200	220	250	250	180	63
Broccoli:	Inshipments	5,339	5,328	5,478	5,794	5,830	
	Hawaii	550	750	500	600	330	5
Burdock:	Inshipments	54	71	82	94	79	
	Hawaii ²						
Cabbage, Chinese:	Inshipments	226	748	1,528	1,027	949	
	Hawaii	³ 5,700	³ 5,500	⁴ 5,300	⁴ 5,700	⁴ 6,100	87
Cabbage, head:	Inshipments	541	1,925	4,022	3,054	2,930	
	Hawaii	13,000	12,600	9,000	9,800	10,100	78
Cabbage, mustard:	Inshipments	278	135	207	237	262	
	Hawaii	1,400	1,300	1,400	1,400	1,400	84
Carrots:	Inshipments	12,341	11,232	11,400	12,607	12,767	
	Hawaii ²						
Cauliflower:	Inshipments	1,446	1,304	1,340	1,076	1,167	
	Hawaii ²						
Celery:	Inshipments	5,047	4,796	5,065	4,931	5,497	
	Hawaii	1,100	1,200	900	830	670	11
Corn, sweet:	Inshipments	795	1,214	1,390	1,169	712	
	Hawaii	2,400	2,500	1,800	1,700	1,800	72
Cucumbers:	Inshipments	748	440	920	1,543	1,118	
	Hawaii	5,400	5,900	5,900	6,000	5,400	83
Daikon:	Inshipments	5	5	3	6	6	
	Hawaii ³	2,100	1,900	²	²	²	
Dasheen:	Inshipments	945	1,056	746	659	680	
	Hawaii ²						
Eggplant:	Inshipments	616	468	675	986	821	
	Hawaii	750	850	1,050	1,200	1,000	55
Ginger root:	Inshipments	7	542	591	224	105	
	Hawaii	14,400	6,000	6,000	5,100	4,300	98
Lettuce ⁵ :	Inshipments	10,135	9,348	9,116	8,065	8,232	
	Hawaii	1,200	1,200	1,300	1,100	1,200	13
Lotus root:	Inshipments	77	57	53	58	70	
	Hawaii ²						
Onions, dry:	Inshipments	17,840	17,500	17,982	21,210	20,562	
	Hawaii	2,100	3,300	1,600	2,300	1,400	6

See footnotes at end of table.

Continued

MARKET SUPPLY: FRESH VEGETABLES



MARKET SUPPLY: Fresh market vegetables, State of Hawaii, 2002-2006¹ -- Continued

Commodity		2002	2003	2004	2005	2006	Hawaii market share 2006
----- 1,000 pounds -----							Percent
Onions, green:	Inshipments	1,460	566	896	590	777	
	Hawaii	1,500	1,600	1,600	1,700	1,500	66
Parsley, American:	Inshipments	77	124	167	178	204	
	Hawaii	300	310	280	250	250	55
Peas, Chinese:	Inshipments	370	300	257	260	256	
	Hawaii ²						
Peppers, green:	Inshipments	2,276	2,254	2,489	2,997	3,402	
	Hawaii	3,200	3,300	3,200	3,000	2,800	45
Potatoes:	Inshipments ⁴	36,942	35,394	34,629	39,032	39,191	
	Hawaii ²						
Pumpkins:	Inshipments	146	158	833	363	203	
	Hawaii	400	850	250	80	290	59
Radish:	Inshipments	2	10	11	9	5	
	Hawaii	100	²	²	²	²	
Romaine:	Inshipments	8,260	8,210	9,336	10,465	10,355	
	Hawaii	1,800	1,900	1,500	1,700	1,300	11
Squash, Italian:	Inshipments	1,245	1,108	1,130	1,259	1,722	
	Hawaii	1,400	1,800	1,700	1,500	1,100	39
Squash, Oriental:	Inshipments	31	23	55	139	492	
	Hawaii	250	200	650	450	400	45
Sweetpotatoes:	Inshipments	1,416	1,365	1,357	1,337	1,530	
	Hawaii	2,300	2,100	4,600	6,300	6,000	80
Taro:	Inshipments	389	609	1,002	705	962	
	Hawaii ³	300	200	100	100	100	9
Tomatoes:	Inshipments	3,245	1,686	3,538	5,624	4,877	
	Hawaii	17,500	17,500	16,800	14,200	14,700	75
Watercress:	Inshipments	41	42	45	41	60	
	Hawaii	800	650	850	700	750	93
All other vegetables:	Inshipments	26,426	28,581	28,974	30,639	32,624	
	Hawaii	13,850	⁶ 16,990	20,020	18,300	21,100	39
Unspecified vegetables:	Inshipments ⁷	9,506	9,048	12,902	11,540	14,226	
Total:	Inshipments	148,812	146,110	158,816	168,686	159,147	
	Hawaii	94,900	⁶ 91,620	87,450	84,960	84,770	35
	All	243,712	⁶ 237,730	246,266	253,646	243,917	

¹ Inshipment data was provided by the Market Analysis and News Branch of the State Department of Agriculture.

² Data not shown separately to avoid disclosure of individual operations but combined and included with "All other vegetables".

³ Fresh market only.

⁴ For processing and fresh market.

⁵ Processed lettuce, both local production and inshipments, are included in "All other vegetables".

⁶ Revised.

⁷ Vegetable data received without commodity names specified.



SNAP BEANS

SNAP BEANS: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	180	5.0	900	97.0	873
2003	200	5.0	1,000	96.0	960
2004	170	5.3	900	114.0	1,026
2005	130	5.4	700	109.0	763
2006	120	5.0	600	105.0	630
County:					
Hawaii/Kauai ²					
2002	50	3.0	150	98.0	147
2003	40	3.8	150	94.0	141
2004	30	4.7	140	143.0	200
2005	10	7.0	70	123.5	86
2006	10	7.5	75	127.0	95
Honolulu					
2002	75	3.9	290	107.5	312
2003	95	3.2	300	108.0	324
2004	95	5.6	530	115.0	610
2005	75	6.1	460	111.0	511
2006	60	5.0	300	116.0	348
Maui					
2002	55	8.4	460	90.0	414
2003	65	8.5	550	90.0	495
2004	45	5.1	230	94.0	216
2005	45	3.8	170	97.5	166
2006	50	4.5	225	83.0	187

¹ Sum of county estimates may not add to State total due to rounding.

² Kauai combined with Hawaii to avoid disclosure of individual operations.

SNAP BEANS: Acreage, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres ¹													
2002	16	17	15	15	14	18	12	15	19	14	17	17	180
2003	19	18	15	16	17	16	15	15	17	15	19	18	200
2004	19	21	14	21	13	11	17	16	11	16	19	11	170
2005	12	7	9	9	11	10	15	11	15	10	12	11	130
2006	16	7	10	10	5	8	13	8	8	10	12	13	120
Production – 1,000 pounds													
2002	60	55	76	94	70	105	55	86	75	74	71	79	900
2003	75	78	72	112	106	75	84	74	79	70	93	82	1,000
2004	68	62	41	80	66	84	117	70	100	63	73	76	900
2005	30	39	57	57	74	67	109	61	85	41	48	32	700
2006	87	58	45	46	16	63	74	50	41	38	45	37	600
Farm price – cents per pound													
2002	106.4	106.1	101.9	90.2	90.0	91.9	83.5	94.3	104.5	99.1	102.1	98.3	97.0
2003	98.0	102.1	105.4	101.1	86.4	81.7	91.0	96.7	92.8	91.6	99.8	105.5	96.0
2004	117.2	118.3	117.6	111.6	106.9	92.1	100.1	109.8	134.2	120.5	122.8	123.2	114.0
2005	93.6	135.5	126.3	117.1	116.8	116.4	100.8	107.6	95.4	102.2	98.6	102.4	109.0
2006	124.9	118.0	122.5	123.5	135.7	102.6	104.2	92.3	70.1	75.0	90.7	90.3	105.0

¹ Sum of monthly data exceeds total because harvest period longer than 1 month.


CHINESE CABBAGE: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	340	20.0	6,800	24.0	1,632
2003	310	21.6	6,700	23.0	1,541
2004	260	20.4	5,300	31.0	1,643
2005	260	21.9	5,700	30.0	1,710
2006	250	24.4	6,100	29.0	1,769
County:					
Hawaii					
2002	200	24.0	4,800	23.0	1,104
2003	200	24.5	4,900	23.1	1,132
2004	190	23.4	4,450	30.2	1,344
2005	180	24.4	4,400	29.3	1,289
2006	160	26.8	4,280	28.0	1,198
Honolulu/Kauai/Maui ²					
2002	140	14.3	2,000	26.4	528
2003	110	16.4	1,800	22.7	409
2004	70	12.1	850	35.2	299
2005	80	16.3	1,300	32.4	421
2006	90	20.2	1,820	31.4	571

¹ Sum of county estimates may not add to State total due to rounding.

² Kauai and Maui combined with Honolulu to avoid disclosure of individual operations.

CHINESE CABBAGE: Acreage, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres													
2002	26	26	31	28	36	28	31	27	27	26	27	27	340
2003	28	33	32	28	26	26	25	22	23	19	20	28	310
2004	18	24	20	25	21	20	19	24	23	23	21	22	260
2005	24	29	27	25	29	16	17	18	20	18	18	19	260
2006	20	24	29	19	17	27	21	18	14	20	21	20	250
Processing and fresh market:													
Production – 1,000 pounds													
2002	614	611	651	579	494	504	545	564	446	576	604	612	6,800
2003	655	601	596	679	579	568	599	541	481	436	469	496	6,700
2004	440	428	465	432	492	431	481	388	367	496	406	474	5,300
2005	508	585	503	573	593	386	351	386	363	418	482	552	5,700
2006	578	548	558	561	657	575	426	389	413	416	459	520	6,100
Farm price – cents per pound													
2002	23.8	19.7	17.7	17.9	18.5	23.7	26.8	26.9	30.0	29.7	29.8	25.3	24.0
2003	21.8	19.4	18.5	17.7	19.0	18.5	22.8	27.9	29.6	29.3	28.2	29.6	23.0
2004	31.9	30.7	29.3	30.1	27.3	29.9	27.4	30.4	33.4	34.8	34.1	33.8	31.0
2005	33.4	33.6	33.1	20.8	24.8	26.5	32.9	32.1	33.5	32.4	31.8	29.1	30.0
2006	28.8	27.2	26.4	26.4	25.1	27.6	28.8	31.3	35.8	33.1	33.0	29.6	29.0



HEAD CABBAGE

HEAD CABBAGE: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	540	24.1	13,000	21.0	2,730
2003	500	25.2	12,600	22.0	2,772
2004	360	25.0	9,000	30.0	2,700
2005	430	22.8	9,800	28.0	2,744
2006	450	22.4	10,100	27.0	2,727
County:					
Hawaii/Honolulu/Kauai ²					
2002	370	23.5	8,700	21.2	1,844
2003	335	23.9	8,000	21.6	1,728
2004	185	22.7	4,200	29.1	1,222
2005	230	23.0	5,300	28.5	1,511
2006	310	22.6	7,000	27.4	1,918
Maui					
2002	170	25.3	4,300	20.6	886
2003	165	27.9	4,600	22.7	1,044
2004	175	27.4	4,800	30.8	1,478
2005	200	22.5	4,500	27.4	1,233
2006	140	22.1	3,100	26.1	809

¹ Sum of county estimates may not add to State total due to rounding.

² Honolulu and Kauai combined with Hawaii to avoid disclosure of individual operations.

HEAD CABBAGE: Acreage, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres													
2002	45	47	51	46	48	48	47	44	42	40	40	42	540
2003	48	46	45	38	46	49	44	38	41	30	39	36	500
2004	22	22	28	36	39	32	26	25	27	26	40	37	360
2005	29	41	43	50	46	29	24	25	27	22	46	48	430
2006	49	45	47	48	39	39	47	18	21	25	30	42	450
Production – 1,000 pounds													
2002	1,036	1,010	1,134	944	1,070	1,205	1,106	1,188	1,138	1,055	948	1,166	13,000
2003	1,294	1,320	1,449	1,128	1,120	1,042	1,125	880	853	666	935	788	12,600
2004	595	556	589	970	973	1,008	871	595	591	633	741	878	9,000
2005	656	665	1,076	1,163	1,011	1,072	646	538	481	514	773	1,205	9,800
2006	928	1,000	1,239	1,109	935	912	956	464	451	499	754	853	10,100
Farm price – cents per pound													
2002	27.5	25.3	24.7	20.5	19.2	18.1	16.7	17.2	17.8	19.7	24.2	22.3	21.0
2003	22.4	20.9	19.7	19.0	18.5	19.3	18.3	20.2	24.7	27.9	28.3	31.8	22.0
2004	38.3	34.4	29.8	27.1	27.3	26.4	25.8	28.7	32.3	34.0	32.2	30.6	30.0
2005	27.6	27.1	26.8	25.9	25.6	26.4	27.0	28.9	29.3	34.2	31.9	29.6	28.0
2006	27.6	23.8	21.9	22.3	25.4	25.4	26.4	32.6	36.6	32.0	33.8	30.2	27.0


CELERY: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	50	22.0	1,100	33.0	363
2003	45	26.7	1,200	32.0	384
2004	30	30.0	900	34.0	306
2005	25	33.2	830	37.0	307
2006	25	26.8	670	37.0	248
County:					
Hawaii					
2002	25	24.0	600	35.0	210
2003	25	28.0	700	34.8	244
2004	20	30.0	600	36.2	217
2005 ²					
2006 ²					
Maui					
2002	25	20.0	500	30.5	153
2003	20	25.0	500	28.0	140
2004	10	30.0	300	29.6	89
2005 ²					
2006 ²					

¹ Sum of county estimates may not add to State total due to rounding.

² Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.



SWEET CORN

SWEET CORN: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	610	3.9	2,400	54.0	1,296
2003	830	3.0	2,500	51.0	1,275
2004	540	3.3	1,800	58.0	1,044
2005	410	4.1	1,700	55.0	935
2006	350	5.1	1,800	66.0	1,188
County:					
Hawaii/Kauai ²					
2002	270	4.1	1,100	46.6	513
2003	320	3.6	1,150	42.0	483
2004	260	2.6	670	44.5	298
2005 ³					
2006 ³					
Honolulu/Maui ⁴					
2002	340	3.8	1,300	60.2	783
2003	510	2.6	1,350	58.7	792
2004	280	4.0	1,130	66.0	746
2005 ³					
2006 ³					

¹ Sum of county estimates may not add to State total due to rounding.

² Kauai combined with Hawaii to avoid disclosure of individual operations.

³ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

⁴ Maui combined with Honolulu to avoid disclosure of individual operations.

SWEET CORN: Acreage, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres													
2002	33	29	45	47	62	55	49	49	52	46	70	73	610
2003	56	70	83	77	77	91	81	66	74	56	68	31	830
2004	42	43	52	51	61	45	45	43	37	32	49	40	540
2005	26	18	24	32	30	39	41	48	39	48	38	27	410
2006	17	21	23	20	19	35	26	42	40	29	44	34	350
Production – 1,000 pounds													
2002	133	90	140	169	190	269	210	215	167	177	340	300	2,400
2003	156	132	170	276	302	227	289	210	183	203	205	147	2,500
2004	110	97	112	155	203	179	161	139	146	120	199	179	1,800
2005	60	63	71	114	137	249	219	241	149	155	122	120	1,700
2006	86	79	61	123	85	189	147	248	215	160	209	198	1,800
Farm price – cents per pound													
2002	62.7	66.0	58.4	58.0	49.4	46.3	48.6	57.5	64.5	52.0	41.7	62.3	54.0
2003	59.7	48.7	39.2	57.2	41.2	50.7	45.6	49.9	50.8	60.7	59.5	53.2	51.0
2004	48.9	47.4	52.2	53.5	45.5	56.1	56.4	60.6	79.4	69.4	64.7	59.8	58.0
2005	58.1	55.3	54.8	53.3	59.0	54.0	53.2	51.0	57.9	48.3	62.5	61.2	55.0
2006	39.5	60.2	133.6	61.5	63.7	76.8	68.4	73.2	59.2	56.1	55.8	67.5	66.0


CUCUMBERS: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State¹					
2002	390	13.8	5,400	46.0	2,484
2003	410	14.4	5,900	48.0	2,832
2004	400	14.8	5,900	53.0	3,127
2005	440	13.6	6,000	46.0	2,760
2006	330	16.4	5,400	50.0	2,700
County:					
Hawaii/Kauai²					
2002	30	21.3	640	45.2	289
2003	30	20.0	600	58.7	352
2004	20	17.5	350	56.8	199
2005	15	14.7	220	53.1	117
2006	10	22.0	220	68.7	151
Honolulu					
2002	180	12.2	2,200	50.7	1,115
2003	200	12.3	2,450	52.0	1,274
2004	195	11.5	2,250	55.0	1,238
2005	230	13.0	3,000	45.1	1,353
2006	130	12.2	1,580	49.0	774
Maui					
2002	180	14.2	2,560	42.2	1,080
2003	180	15.8	2,850	42.3	1,206
2004	185	17.8	3,300	51.2	1,690
2005	195	14.3	2,780	46.4	1,290
2006	190	18.9	3,600	49.3	1,775

¹ Sum of county estimates may not add to State total due to rounding.

² Kauai combined with Hawaii to avoid disclosure of individual operations.

CUCUMBERS: Acreage, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres¹													
2002	35	36	35	33	33	33	34	34	35	36	36	33	390
2003	32	32	34	33	36	34	35	36	33	35	36	34	410
2004	34	32	31	31	31	33	32	32	35	35	37	37	400
2005	35	29	36	35	36	35	37	37	52	38	38	34	440
2006	26	25	23	20	25	29	31	25	29	27	25	25	330
Production – 1,000 pounds													
2002	348	359	434	457	447	558	499	507	437	395	456	503	5,400
2003	406	381	380	414	624	670	656	596	395	483	496	399	5,900
2004	348	291	396	405	538	701	656	659	552	525	407	422	5,900
2005	198	289	376	473	697	657	682	607	562	557	523	379	6,000
2006	385	461	330	377	458	514	553	435	588	468	369	462	5,400
Farm price – cents per pound													
2002	58.3	57.4	54.8	43.3	41.2	35.3	36.7	44.1	47.0	42.7	50.2	49.6	46.0
2003	49.7	55.7	47.5	49.2	42.7	43.0	43.2	43.6	50.6	51.5	54.6	54.0	48.0
2004	56.3	60.9	64.0	55.7	44.9	44.1	44.4	49.1	54.9	58.2	62.0	58.5	53.0
2005	56.3	65.1	52.7	59.1	41.5	42.0	38.1	39.2	43.0	46.2	45.3	48.8	46.0
2006	50.7	52.0	59.2	59.9	45.2	37.4	42.0	48.6	50.4	50.1	56.8	56.3	50.0

¹ Sum of monthly data exceeds total because harvest period longer than 1 month.



DAIKON: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	250	10.0	2,500	30.0	750
2003	220	10.5	2,300	31.0	713
2004	200	8.5	1,700	32.0	544
2005 ²					
2006 ²					
County:					
Hawaii					
2002	185	9.5	1,750	28.0	490
2003	165	11.5	1,900	30.0	570
2004	170	7.6	1,300	30.0	390
2005 ²					
2006 ²					
Honolulu/Kauai/Maui ³					
2002	65	11.5	750	34.6	260
2003	55	7.3	400	35.8	143
2004	30	13.3	400	38.5	154
2005 ²					
2006 ²					

¹ Sum of county estimates may not add to State total due to rounding.

² Data not shown to avoid disclosure of individual operations.

³ Kauai and Maui combined with Honolulu to avoid disclosure of individual operations.

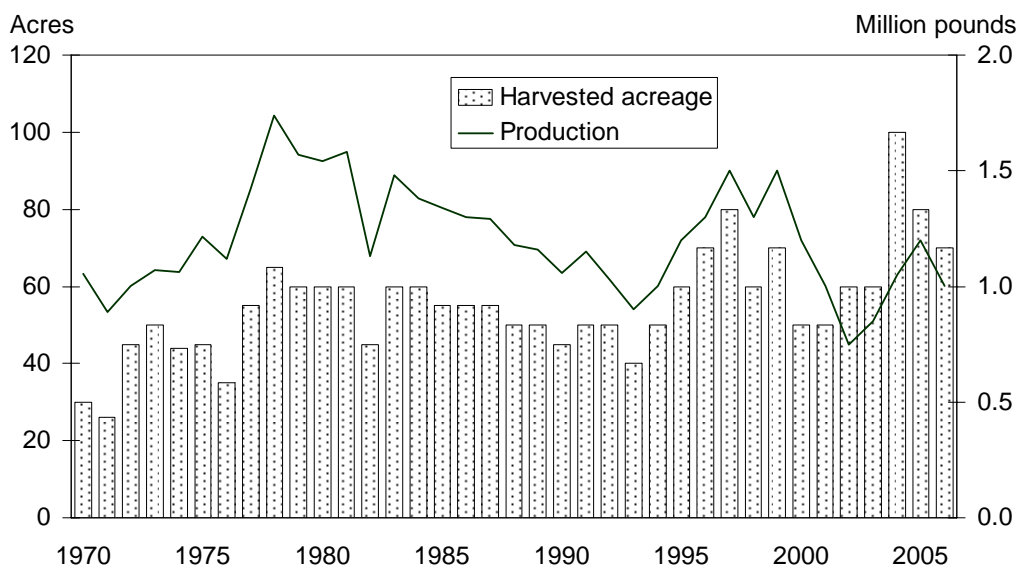



EGGPLANT: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State¹					
2002	60	12.5	750	73.0	548
2003	60	14.2	850	74.0	629
2004	100	10.5	1,050	77.0	809
2005	80	14.6	1,200	81.0	972
2006	70	14.3	1,000	84.0	840
County:					
Hawaii/Kauai/Maui²					
2002	10	11.0	110	90.9	100
2003	20	12.5	250	81.2	203
2004	15	12.7	190	100.0	190
2005	10	17.0	170	74.7	127
2006	10	16.0	160	94.4	151
Honolulu					
2002	50	12.8	640	70.0	448
2003	40	15.0	600	71.0	426
2004	85	10.1	860	72.0	619
2005	70	14.7	1,030	82.0	845
2006	60	14.0	840	82.0	689

¹ Sum of county estimates may not add to State total due to rounding.

² Kauai and Maui combined with Hawaii to avoid disclosure of individual operations.

**EGGPLANT: Acreage and Production,
State of Hawaii, 1970-2006**




LETTUCES

LETTUCES (HEAD, SEMI-HEAD): Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	120	10.0	1,200	57.0	684
2003	120	10.0	1,200	58.0	696
2004	110	11.8	1,300	61.0	793
2005	110	10.0	1,100	68.0	748
2006	120	10.0	1,200	70.0	840
County:					
Hawaii					
2002	75	10.9	820	50.0	410
2003	70	12.1	850	51.6	439
2004	60	12.7	760	54.0	410
2005	65	10.8	700	60.2	421
2006	60	12.8	770	60.0	462
Honolulu/Kauai/Maui ²					
2002	45	8.4	380	72.0	274
2003	50	7.0	350	73.4	257
2004	50	10.8	540	70.9	383
2005	45	8.9	400	81.7	327
2006	60	7.2	430	87.8	378

¹ Sum of county estimates may not add to State total due to rounding.

² Kauai and Maui combined with Honolulu to avoid disclosure of individual operations.

LETTUCES (HEAD, SEMI-HEAD): Acreage, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres													
2002	11	12	11	10	11	10	10	11	8	8	9	9	120
2003	10	10	12	11	10	9	10	10	9	9	10	10	120
2004	8	11	7	8	9	9	10	10	9	9	10	10	110
2005	8	9	8	11	10	9	8	8	9	9	9	12	110
2006	9	12	9	11	9	10	9	10	12	12	8	9	120
Production – 1,000 pounds													
2002	94	83	123	124	112	104	96	106	96	91	79	92	1,200
2003	95	90	110	114	107	97	110	96	98	99	94	90	1,200
2004	73	83	94	93	117	134	129	125	109	131	107	105	1,300
2005	73	74	110	113	103	90	92	83	83	92	98	89	1,100
2006	114	105	87	94	106	119	105	103	106	105	74	82	1,200
Farm price – cents per pound													
2002	57.2	50.7	55.0	61.8	59.9	61.4	55.0	54.3	54.5	56.0	57.6	58.5	57.0
2003	57.9	58.3	58.7	59.1	55.5	56.3	55.4	57.3	59.2	55.8	57.5	65.3	58.0
2004	60.8	62.1	57.9	59.9	61.1	60.2	59.9	60.8	62.2	61.1	60.9	65.6	61.0
2005	64.0	65.3	68.1	66.8	67.6	66.7	77.2	65.3	66.1	74.1	67.1	66.7	68.0
2006	70.0	72.9	65.7	66.8	66.0	66.7	68.2	69.4	75.2	72.2	74.9	72.9	70.0



DRY ONIONS: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	200	10.5	2,100	96.0	2,016
2003	330	10.0	3,300	84.0	2,772
2004	180	8.9	1,600	149.0	2,384
2005	220	10.5	2,300	132.0	3,036
2006	140	10.0	1,400	145.0	2,030
County:					
Hawaii/Honolulu/Kauai ²					
2002	70	10.9	760	73.0	555
2003	185	6.4	1,175	58.9	692
2004	55	8.2	450	86.4	389
2005	95	7.9	750	80.9	607
2006	30	4.3	130	86.0	112
Maui					
2002	130	10.3	1,340	109.0	1,461
2003	145	14.7	2,125	97.9	2,080
2004	125	9.2	1,150	173.5	1,995
2005	125	12.4	1,550	156.7	2,429
2006	110	11.5	1,270	151.0	1,918

¹ Sum of county estimates may not add to State total due to rounding.

² Honolulu and Kauai combined with Hawaii to avoid disclosure of individual operations.

DRY ONIONS: Acreage, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres													
2002	10	16	19	20	20	19	22	10	10	15	23	16	200
2003	26	16	62	56	34	35	17	18	12	12	34	8	330
2004	13	11	9	21	14	15	10	15	12	15	26	19	180
2005	22	17	21	24	9	19	22	15	9	31	22	9	220
2006	6	4	11	8	28	23	8	21	8	6	9	8	140
Production – 1,000 pounds													
2002	53	101	179	150	157	167	202	137	137	188	408	221	2,100
2003	191	121	327	470	381	570	480	173	171	136	200	80	3,300
2004	89	52	52	135	142	134	117	142	167	167	228	175	1,600
2005	51	52	69	404	185	330	352	267	143	235	142	70	2,300
2006	40	61	69	94	213	253	148	240	84	64	75	59	1,400
Farm price – cents per pound													
2002	109.8	85.3	81.7	93.5	75.3	72.2	80.2	103.0	105.1	107.1	111.2	110.4	96.0
2003	95.0	108.4	100.5	102.7	78.6	56.2	61.0	80.3	95.1	103.7	94.9	129.6	84.0
2004	137.1	152.9	117.9	126.0	183.8	117.5	174.8	161.5	172.9	168.5	128.8	134.3	149.0
2005	164.5	152.0	163.4	139.5	157.5	100.1	106.6	126.4	144.4	132.3	156.6	174.5	132.0
2006	183.1	174.0	175.9	188.9	179.9	146.5	125.9	113.2	105.4	112.9	131.7	135.4	145.0



GREEN ONIONS: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	125	12.0	1,500	89.0	1,335
2003	130	12.3	1,600	90.0	1,440
2004	130	12.3	1,600	97.0	1,552
2005	155	11.0	1,700	99.0	1,683
2006	130	11.5	1,500	100.0	1,500
County:					
Hawaii/Kauai/Maui ²					
2002	30	6.7	200	105.2	210
2003	20	10.0	200	103.8	208
2004	15	13.3	200	104.1	208
2005	15	13.3	200	114.0	228
2006	15	18.0	270	113.8	307
Honolulu					
2002	95	13.7	1,300	86.5	1,125
2003	110	12.7	1,400	88.0	1,232
2004	115	12.2	1,400	96.0	1,344
2005	140	10.7	1,500	97.0	1,455
2006	115	10.7	1,230	97.0	1,193

¹ Sum of county estimates may not add to State total due to rounding.

² Kauai and Maui combined with Hawaii to avoid disclosure of individual operations.

GREEN ONIONS: Acreage, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres													
2002	9	9	10	10	11	12	11	11	12	10	10	10	125
2003	10	11	13	10	11	11	10	11	10	11	11	11	130
2004	11	9	8	10	12	11	11	12	11	10	12	13	130
2005	15	14	13	15	14	14	9	10	11	11	12	17	155
2006	12	10	11	9	9	9	12	12	11	11	11	13	130
Production – 1,000 pounds													
2002	114	90	111	121	109	121	145	142	133	125	134	155	1,500
2003	133	134	132	138	140	148	136	151	138	122	108	120	1,600
2004	111	95	102	140	147	138	154	156	147	145	130	135	1,600
2005	104	88	131	132	157	145	147	141	148	148	161	198	1,700
2006	123	129	114	58	135	143	125	135	117	128	167	126	1,500
Farm price – cents per pound													
2002	98.0	91.5	94.7	92.9	89.4	88.1	82.7	85.5	89.8	86.8	87.6	85.5	89.0
2003	87.1	88.7	89.1	90.0	88.6	91.5	88.2	88.5	88.9	85.5	94.5	100.8	90.0
2004	103.8	115.8	115.1	103.3	88.0	86.5	83.4	93.3	89.7	96.2	104.5	99.9	97.0
2005	112.6	127.3	126.3	107.2	100.4	93.6	91.3	87.3	84.6	91.6	91.6	94.9	99.0
2006	98.8	101.4	108.4	132.8	104.9	91.7	92.0	91.0	90.3	92.3	107.2	106.5	100.0



GREEN PEPPERS: Acreage, yield, production, price, and value, State of Hawaii, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
2002	215	14.9	3,200	59.0	1,888
2003	220	15.0	3,300	61.0	2,013
2004	240	13.3	3,200	69.0	2,208
2005	230	13.0	3,000	64.0	1,920
2006	260	10.8	2,800	71.0	1,988

GREEN PEPPERS: Acreage, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres ¹													
2002	17	17	17	18	18	18	18	18	18	17	19	20	215
2003	17	17	18	17	17	18	19	19	20	20	19	19	220
2004	20	19	19	20	20	20	19	20	20	20	22	21	240
2005	22	20	23	23	22	20	23	22	22	21	21	19	230
2006	22	22	25	23	21	21	21	23	23	25	22	22	260
Production – 1,000 pounds													
2002	264	262	283	271	271	264	266	277	271	256	267	248	3,200
2003	248	267	270	269	279	280	306	278	278	274	270	281	3,300
2004	295	274	221	258	281	280	282	284	279	330	218	198	3,200
2005	218	230	274	314	310	168	240	241	226	236	253	290	3,000
2006	237	270	255	310	225	226	244	203	223	196	182	229	2,800
Farm price – cents per pound													
2002	62.9	57.4	64.5	62.9	62.3	60.8	56.1	53.1	55.1	55.2	57.9	60.1	59.0
2003	60.9	61.3	63.5	62.9	64.2	61.9	63.8	58.2	55.8	57.2	57.9	64.2	61.0
2004	71.7	76.5	78.1	78.7	71.6	64.2	60.1	57.1	57.2	66.6	74.4	78.8	69.0
2005	58.9	61.3	72.3	61.1	58.9	69.4	68.5	63.3	58.4	62.2	64.6	69.9	64.0
2006	82.3	75.1	76.1	72.3	73.8	68.9	68.3	68.2	65.1	67.1	66.5	64.3	71.0

¹ Sum of monthly data exceeds total because harvest period longer than 1 month.



ROMAINE: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	150	12.0	1,800	47.0	846
2003	160	11.9	1,900	44.0	836
2004	140	10.7	1,500	50.0	750
2005	140	12.1	1,700	59.0	1,003
2006	110	11.8	1,300	63.0	819
County:					
Hawaii/Honolulu ²					
2002	120	12.1	1,450	48.2	699
2003	125	11.6	1,450	45.5	660
2004	110	10.0	1,100	49.6	546
2005	105	10.5	1,100	61.7	679
2006	90	11.4	1,030	63.3	652
Maui					
2002	30	11.7	350	42.0	147
2003	35	12.9	450	39.0	176
2004	30	13.3	400	51.0	204
2005	35	17.1	600	54.0	324
2006	20	13.5	270	62.0	167

¹ Sum of county estimates may not add to State total due to rounding.

² Honolulu combined with Hawaii to avoid disclosure of individual operations.

ROMAINE: Acreage, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres													
2002	17	15	16	14	14	10	9	9	8	9	12	17	150
2003	19	13	14	18	13	11	10	10	9	12	13	18	160
2004	8	18	14	12	10	9	9	12	10	10	12	16	140
2005	12	16	13	15	15	11	10	7	7	8	11	15	140
2006	11	17	12	9	7	8	9	8	9	8	7	5	110
Production – 1,000 pounds													
2002	155	181	215	184	173	123	124	114	113	123	120	175	1,800
2003	194	148	173	184	205	163	131	127	125	132	164	154	1,900
2004	107	131	107	119	124	136	125	131	123	123	128	146	1,500
2005	143	131	155	175	176	130	134	124	109	130	142	151	1,700
2006	149	144	103	96	123	106	111	113	97	100	84	74	1,300
Farm price – cents per pound													
2002	41.4	50.6	58.0	51.6	45.9	44.5	42.3	43.5	44.5	44.9	44.3	43.5	47.0
2003	40.4	41.1	39.4	44.9	37.8	49.5	47.3	46.3	45.6	45.2	45.1	49.3	44.0
2004	54.7	54.5	42.2	45.3	52.5	47.6	47.2	46.7	49.1	50.6	51.2	56.8	50.0
2005	47.7	46.3	48.1	57.4	60.7	60.6	62.3	73.5	62.2	62.2	63.4	66.7	59.0
2006	64.2	61.8	63.9	62.2	61.3	61.9	61.8	61.8	66.7	64.2	61.7	66.6	63.0



ITALIAN SQUASH: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	175	8.0	1,400	46.0	644
2003	150	12.0	1,800	52.0	936
2004	230	7.4	1,700	54.0	918
2005	200	7.5	1,500	56.0	840
2006	175	6.3	1,100	64.0	704
County:					
Hawaii/Honolulu/Kauai ²					
2002	100	7.7	770	47.0	362
2003	65	11.1	720	48.8	351
2004	155	6.1	940	53.2	500
2005	110	7.7	850	56.0	476
2006	110	5.8	635	66.9	425
Maui					
2002	75	8.4	630	44.8	282
2003	85	12.7	1,080	54.2	585
2004	75	10.1	760	55.0	418
2005	90	7.2	650	56.0	364
2006	65	7.2	465	60.0	279

¹ Sum of county estimates may not add to State total due to rounding.

² Honolulu and Kauai combined with Hawaii to avoid disclosure of individual operations.





SWEETPOTATOES

SWEETPOTATOES: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	300	7.7	2,300	43.0	989
2003	210	10.0	2,100	41.0	861
2004	400	11.5	4,600	47.0	2,162
2005	410	15.4	6,300	61.0	3,843
2006	360	16.7	6,000	74.0	4,440
County:					
Hawaii/Honolulu/Kauai ²					
2002	205	8.0	1,650	39.8	657
2003	150	9.6	1,440	36.4	524
2004	350	11.4	4,000	45.8	1,832
2005	340	16.8	5,720	60.6	3,466
2006 ³					
Maui					
2002	95	6.8	650	51.1	332
2003	60	11.0	660	50.9	336
2004	50	12.0	600	55.0	330
2005	70	8.3	580	65.0	377
2006 ³					

¹ Sum of county estimates may not add to State total due to rounding.

² Honolulu and Kauai combined with Hawaii to avoid disclosure of individual operations.

³ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.


TARO: Number of farms, acreage, marketings, price, and value, by county, 2002-2006

Market Number of Farms, Acreage, Marketings, Price, and Value, by County, 2002-2006											
Year	Farms	Acreage in crop ¹			Marketings			Farm price			Value of sales
		Poi taro	Chinese taro	Total	Fresh	Processed	Total	Poi taro	Chinese taro	All	
	<i>Number</i>	<i>----- Acres -----</i>			<i>----- 1,000 pounds -----</i>			<i>----- Cents per pound -----</i>			<i>1,000 dollars</i>
State											
2002	150	400	30	430	300	5,800	6,100	54.2	51.2	54.0	3,294
2003	150	390	30	420	200	4,800	5,000	53.9	56.3	54.0	2,700
2004	130	360	10	370	100	5,100	5,200	54.0	53.8	54.0	2,808
2005	110	350	10	360	100	4,200	4,300	54.0	54.0	54.0	2,322
2006	105	360	20	380	100	4,400	4,500	56.8	65.5	57.0	2,565
County:											
Hawaii											
2002	50	60	20	80	200	550	750	61.4	48.4	55.3	415
2003	40	55	15	70	130	450	580	59.7	54.9	57.8	335
2004	30	50	10	60	100	400	500	60.0	53.1	57.5	288
2005	30	40	10	50	60	240	300	57.6	50.0	56.1	168
2006	25	55	10	65	70	220	290	61.0	65.5	62.1	180
Honolulu/Maui ²											
2002	35	90	10	100	60	1,190	1,250	54.6	67.2	55.2	690
2003	40	85	15	100	50	1,050	1,100	54.7	61.6	55.0	605
2004	35	75	*	75	*	800	800	55.1	³	55.1	441
2005	30	75	*	75	40	860	900	56.6	60.0	56.8	511
2006	35	80	10	90	30	880	910	62.5	65.5	62.6	570
Kauai											
2002	65	250	*	250	40	4,060	4,100	53.4	³	53.4	2,189
2003	70	250	*	250	20	3,300	3,320	53.0	³	53.0	1,760
2004	65	235	*	235	*	3,900	3,900	53.3	³	53.3	2,079
2005	50	235	*	235	*	3,100	3,100	53.0	³	53.0	1,643
2006	45	225	*	225	*	3,300	3,300	55.0	³	55.0	1,815

* = Less than 5 acres or 5,000 pounds.

¹ Survey conducted in November each year. Does not include acreage used primarily for leaf production.

² Maui combined with Honolulu to avoid disclosure of individual operations.

³ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.



TOMATOES

TOMATOES: Acreage, yield, production, price, and value, State of Hawaii, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
2002	580	30.2	17,500	55.0	9,625
2003	560	31.3	17,500	58.0	10,150
2004	600	28.0	16,800	66.0	11,088
2005	660	21.5	14,200	69.0	9,798
2006	700	21.0	14,700	77.0	11,319

TOMATOES: Acreage, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
Harvested acres ¹													
2002	60	60	61	62	62	51	53	48	48	46	55	56	580
2003	55	57	59	56	55	54	54	54	52	59	62	62	560
2004	61	59	52	52	52	51	48	47	49	59	58	59	600
2005	46	61	55	55	55	55	53	53	68	66	68	64	660
2006	68	71	70	69	62	57	58	58	58	66	67	66	700
Production – 1,000 pounds													
2002	1,370	1,431	1,553	1,412	1,460	1,491	1,543	1,534	1,481	1,383	1,352	1,490	17,500
2003	1,407	1,350	1,386	1,468	1,503	1,478	1,564	1,497	1,438	1,517	1,529	1,363	17,500
2004	1,440	1,070	1,441	1,443	1,748	1,324	1,678	1,453	1,323	1,527	1,079	1,274	16,800
2005	785	811	1,144	1,476	1,487	1,081	1,128	1,310	1,343	1,053	1,141	1,441	14,200
2006	1,286	1,181	986	1,158	956	911	1,641	1,444	1,570	1,254	1,316	997	14,700
Farm price – cents per pound													
2002	64.3	48.3	55.5	57.0	59.5	57.3	51.8	48.5	42.4	51.2	58.7	66.7	55.0
2003	65.6	58.9	60.2	54.3	52.7	57.1	57.1	53.6	54.0	60.9	61.2	60.9	58.0
2004	59.3	64.4	72.4	65.6	71.6	61.9	44.1	55.5	60.0	74.8	80.0	89.7	66.0
2005	76.9	71.6	68.6	73.0	64.0	76.2	68.0	66.3	61.9	69.1	65.8	71.3	69.0
2006	77.9	77.1	74.1	74.8	77.6	80.4	62.7	63.3	80.8	98.7	90.6	69.6	77.0

¹ Sum of monthly data exceeds total because harvest period longer than 1 month.

PROCESSED CHINESE CABBAGE AND DAIKON, WATERCRESS



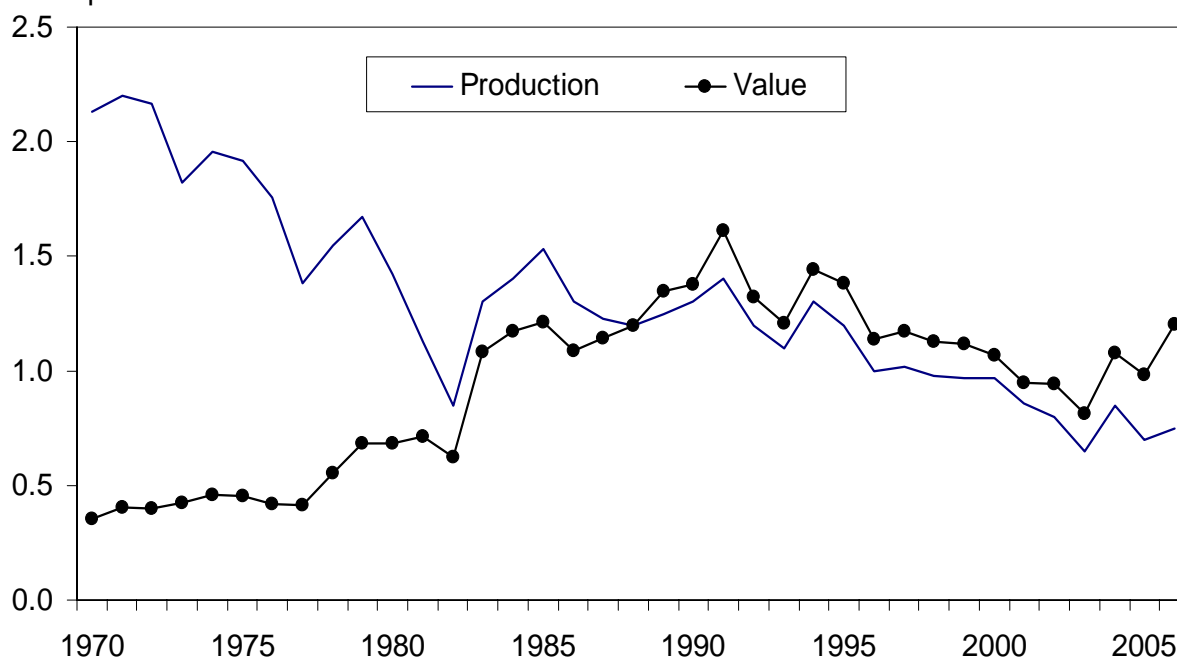
PROCESSED CHINESE CABBAGE AND DAIKON: Quantity processed, price, and value, State of Hawaii, 2002-2006

Year	Chinese cabbage			Daikon		
	Quantity processed	Farm price	Value of sales	Quantity processed	Farm price	Value of sales
	1,000 pounds	Cents per pound	1,000 dollars	1,000 pounds	Cents per pound	1,000 dollars
2002	1,100	24.0	264	400	30.0	120
2003	1,200	23.0	276	400	31.0	124
2004 ¹						
2005 ¹						
2006¹						

¹ Beginning 2004, estimates have been discontinued due to insufficient data.

WATERCRESS: Production and Farm Value, State of Hawaii, 1970-2006

Million pounds and dollars



WATERCRESS: Acreage, production, price, and value, State of Hawaii, 2002-2006

Year	Acreage in crop	Production	Farm price	Value of sales
	Acres	1,000 pounds	Cents per pound	1,000 dollars
2002	35	800	118.0	944
2003	30	650	125.0	812
2004	30	850	127.0	1,080
2005	35	700	140.0	981
2006	35	750	160.0	1,201



WATERMELONS

WATERMELONS: Acreage, yield, production, price, and value, by county, 2002-2006

Year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
State ¹					
2002	550	20.5	11,300	26.0	2,938
2003	450	26.4	11,900	24.0	2,856
2004	510	19.8	10,100	24.0	2,424
2005	450	25.1	11,300	27.0	3,051
2006	590	17.6	10,400	28.0	2,912
County:					
Hawaii/Kauai/Maui ²					
2002	30	10.0	300	33.3	100
2003	40	5.3	210	29.3	62
2004	125	4.8	600	24.0	144
2005 ³					
2006 ³					
Honolulu					
2002	520	21.2	11,000	25.8	2,838
2003	410	28.5	11,690	23.9	2,794
2004	385	24.7	9,500	24.0	2,280
2005 ³					
2006 ³					

¹ Sum of county estimates may not add to State total due to rounding.

² Kauai and Maui combined with Hawaii to avoid disclosure of individual operations.

³ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.





**OTHER VEGETABLES: Acreage, yield, production, price, and value,
State of Hawaii, 2002-2006**

Crop and year	Harvested acres	Yield per acre	Production	Farm price	Value of sales
		----- 1,000 pounds -----		Cents per pound	1,000 dollars
Bittermelon					
2002	20	10.0	200	90.0	180
2003	15	14.7	220	70.0	154
2004	20	12.5	250	80.0	200
2005	30	8.3	250	93.0	233
2006	25	7.2	180	80.0	144
Broccoli					
2002	150	3.7	550	68.0	374
2003	170	4.4	750	60.0	450
2004	125	4.0	500	67.0	335
2005	125	4.8	600	73.0	438
2006	60	5.5	330	84.0	277
Cabbage, mustard					
2002	130	10.8	1,400	51.0	714
2003	130	10.0	1,300	52.0	676
2004	155	9.0	1,400	58.0	812
2005	110	12.7	1,400	56.0	784
2006	115	12.2	1,400	58.0	812
Pumpkins					
2002	80	5.0	400	40.0	160
2003	70	12.1	850	48.0	408
2004	40	6.3	250	58.0	145
2005	35	2.3	80	63.0	50
2006	25	11.6	290	60.0	174
Radish					
2002	10	10.0	100	55.0	55
2003 ¹					
2004 ¹					
2005 ¹					
2006¹					
Squash, Oriental (Hyotan and Togan)					
2002	10	25.0	250	41.0	103
2003	10	20.0	200	46.0	92
2004	50	13.0	650	53.0	345
2005	40	11.3	450	55.0	247
2006	40	10.0	400	46.0	184

¹ Data not shown to avoid disclosure of individual operations.



2006 CATTLE, MILK, AND HOG HIGHLIGHTS

♦ Cattle

Marketings during 2006 totaled 34.5 million pounds (live weight). This was 15 percent more than in 2005 as both the number sold and average live weight increased in 2006.

Exports of cattle and calves totaled 46,000 head in 2006, up 10 percent from 2005 and accounting for 75 percent of all cattle and calf sales. The majority of exports were calves weighing less than 500 pounds, live weight. Local commercial slaughter totaled 10,500 head in 2006, up 14 percent from 2005.

The annual average price ranchers received for all cattle and calves marketed in 2006 was \$76.70 per hundredweight (live weight), up \$1.40 per hundredweight from 2005. The higher farm price combined with the increase in pounds sold resulted in total farm revenues of \$26.5 million in 2006, up 17 percent from 2005.

The inventory of cattle and calves on Hawaii ranches totaled 158,000 head on January 1, 2007. This represents a decrease of 2 percent from 2006, but was the second highest January 1 inventory total over the past seven years.

♦ Milk

Dairy cows produced 57.0 million pounds of milk in 2006, down 18 percent from the previous year. The cow herd dropped 20 percent from 2005 to 4,300 head in 2006. Cows produced an average of 13,256 pounds of milk in 2006, up an average of 367 pounds per cow from 2005.

In 2006, producers received \$26.00 per hundredweight for milk sold, down \$1.00 per hundredweight from the 2005 average of \$27.00 per hundredweight. Revenues at the farm gate level totaled \$14.5 million in 2006, down 21 percent from 2005. Milkfat averaged 3.36 percent in 2006, down from the 3.40 percent averaged in 2005.

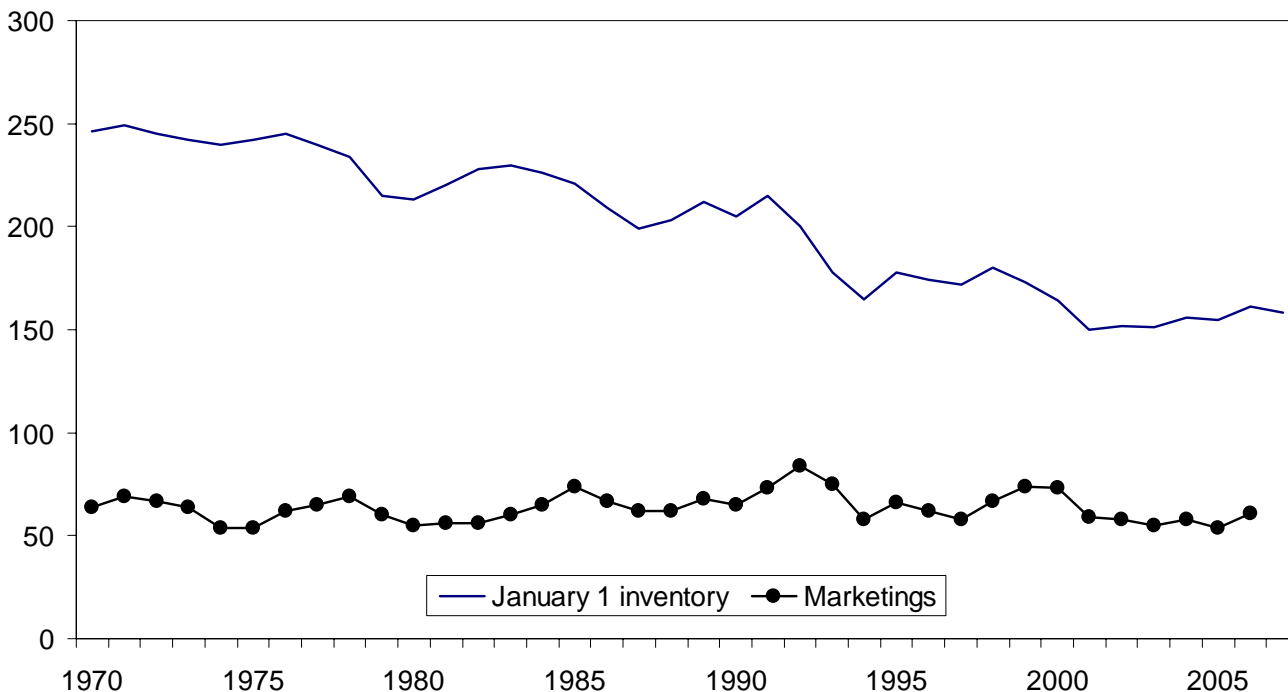
♦ Hogs and Pigs

Hog marketings during 2006 totaled 4.5 million pounds (live weight), down 12 percent from 2005. The number of hogs marketed decreased 12 percent to 23,000 head in 2006. However, the average farm price increased 3 percent to a live weight price of \$92.70 per hundredweight. The rise in farm price could not offset the decline in pounds sold; and as a result, total value of sales declined 9 percent to \$4.2 million in 2006.

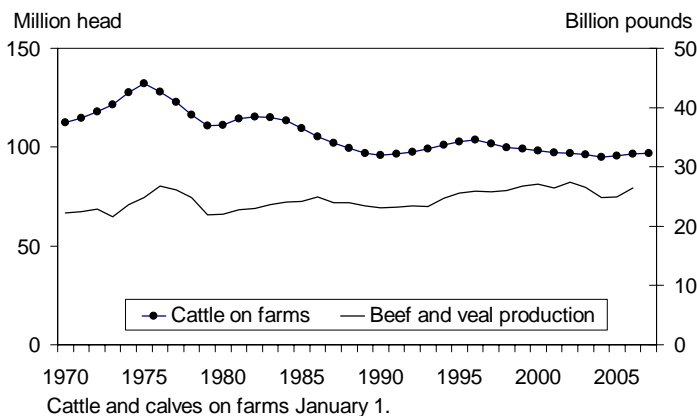


Cattle Inventory and Marketings, State of Hawaii, 1970-2007

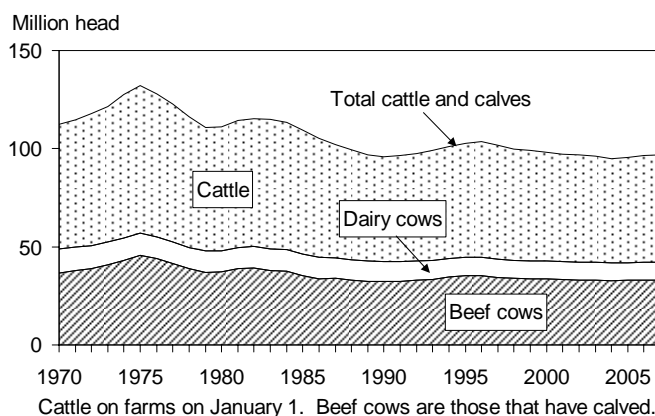
Thousand head



U.S. Cattle Numbers and Beef Production



U.S. Cattle on Farms





CATTLE

CATTLE AND CALVES: January 1 inventory by sex classes and weight, by county, 2003-2007

Year	All cattle and calves	All cows and heifers that have calved			Heifers 500 pounds and over				Steers 500 lbs. and over	Bulls 500 lbs. and over	Steers, heifers, and bulls under 500 lbs.
		Total	Beef cows	Milk cows	Total	Beef cow replacements	Milk cow replacements	Other			

1,000 head

State ¹

2003	151	86	79	7	21	12	3	6	7	5	32
2004	156	88	82	6	20	12	2	6	7	5	36
2005	155	87	81.3	5.7	22	15	2	5	7	5	34
2006	161	92	87.4	4.6	22	15	2	5	7	5	35
2007	158	89	85.2	3.8	21	15	1	5	8	5	35

County: Hawaii

2003	113.0	64.7	61.4	3.3	14.6	9.4	1.6	3.7	4.4	3.9	25.3
2004	115.4	66.4	63.2	3.2	14.8	8.8	1.5	4.5	4.1	3.7	26.4
2005	116.0	64.4	61.4	3.0	16.2	11.7	1.2	3.3	4.5	3.7	27.2
2006	119.3	69.5	67.1	2.4	15.6	11.9	1.1	2.6	3.7	3.9	26.6
2007	117.2	67.6	65.4	2.2	15.5	11.9	.9	2.7	3.9	3.8	26.4

Honolulu

2003	8.8	5.3	2.0	3.3	1.6	.3	1.0	.3	.4	.2	1.3
2004	10.6	6.2	3.0	3.2	1.5	.3	.9	.3	.6	.2	2.1
2005	8.0	5.1	2.4	2.7	1.2	.5	.5	.2	.3	.1	1.3
2006	8.2	5.0	2.8	2.2	1.2	.5	.6	.1	.4	.2	1.4
2007	7.1	4.1	2.5	1.6	.9	.5	.3	.1	.3	.1	1.7

Kauai

2003	10.4	5.4	5.4	*	2.0	1.2	0	.8	1.0	.4	1.6
2004	11.6	5.4	5.4	*	2.0	1.2	0	.8	1.1	.4	2.7
2005	12.0	6.3	6.3	*	1.9	1.1	0	.8	1.2	.4	2.2
2006	11.9	6.0	6.0	*	1.7	.9	0	.8	1.1	.3	2.8
2007	12.0	5.8	5.8	*	1.7	.9	0	.8	1.0	.4	3.1

Maui

2003	18.8	10.6	10.6	*	2.5	1.4	0	1.1	1.0	.6	4.1
2004	18.4	10.6	10.6	*	2.0	1.3	0	.7	.8	.6	4.4
2005	19.0	11.2	11.2	*	2.5	1.5	0	1.0	1.2	.6	3.5
2006	21.6	11.5	11.5	*	3.3	2.1	0	1.2	2.0	.6	4.2
2007	21.7	11.5	11.5	*	2.9	1.9	0	1.0	2.6	.8	3.9

* = Less than 50.

¹ Sum of county estimates may not add to State total due to rounding.



**CATTLE AND CALVES: Number of operations, number and pounds sold, price, and value,
by county, 2002-2006**

Year	Operations	Number sold ^{1 2}	Pounds sold (live weight) ³	Farm price (live weight) ⁴	Value of sales ²
	<i>Number</i>	<i>1,000 head</i>	<i>1,000 pounds</i>	<i>Dollars per hundredweight</i>	<i>1,000 dollars</i>
State					
2002	750	58	34,010	53.90	18,326
2003	750	55	29,570	58.10	17,192
2004	800	58	34,750	64.80	22,534
2005	800	54	29,930	75.30	22,548
2006	800	61	34,510	76.70	26,452
County:					
Hawaii					
2002	440	44.1	25,399	54.00	13,724
2003	440	45.7	23,167	59.60	13,811
2004	470	44.3	25,213	66.90	16,873
2005	470	41.1	21,018	79.90	16,790
2006	470	46.4	24,911	79.50	19,809
Honolulu					
2002	50	1.6	1,323	43.20	572
2003	50	.5	519	39.10	203
2004	50	1.7	1,166	58.40	681
2005	50	3.0	2,277	60.70	1,382
2006	50	3.1	2,360	64.20	1,515
Kauai					
2002	120	4.2	2,749	52.50	1,442
2003	120	2.3	1,818	50.20	912
2004	120	4.8	3,260	60.30	1,965
2005	120	3.8	2,785	60.60	1,689
2006	120	3.9	2,683	64.30	1,725
Maui					
2002	140	8.1	4,539	57.00	2,588
2003	140	6.5	4,066	55.70	2,266
2004	160	7.2	5,111	59.00	3,015
2005	160	6.1	3,850	69.80	2,686
2006	160	7.6	4,556	74.70	3,403

¹ Includes custom slaughter for home use on farms where produced and out-of-State sales of cattle and calves, but excludes inter-farm sales.

² Sum of county estimates may not add to State total due to rounding.

³ Excludes custom slaughter for use on farms where produced.

⁴ Prices are equivalent delivered slaughterhouse for sales on county of production and delivered shipper's dock for interisland and out-of-State sales.



CATTLE

CATTLE: Number sold, pounds, price, and value, State of Hawaii, 2002-2006

Year	Number sold ¹	Pounds sold (live weight) ²	Farm price (live weight)	Value of sales
	<i>1,000 head</i>	<i>1,000 pounds</i>	<i>Dollars per hundredweight</i>	<i>1,000 dollars</i>
2002	20	18,050	41.40	7,473
2003	14	12,350	41.60	5,138
2004	24	20,470	47.30	9,682
2005	15	13,160	49.00	6,448
2006	20	17,290	52.40	9,060

¹ Includes custom slaughter for home use on farms where produced and out-of-State sales of cattle, but excludes inter-farm sales.

² Excludes custom slaughter for use on farms where produced.

CALVES: Number sold, pounds, price, and value, State of Hawaii, 2002-2006

Year	Number sold ¹	Pounds sold (live weight) ²	Farm price (live weight)	Value of sales
	<i>1,000 head</i>	<i>1,000 pounds</i>	<i>Dollars per hundredweight</i>	<i>1,000 dollars</i>
2002	38	15,960	68.00	10,853
2003	41	17,220	70.00	12,054
2004	34	14,280	90.00	12,852
2005	39	16,770	96.00	16,099
2006	41	17,220	101.00	17,392

¹ Includes custom slaughter for home use on farms where produced and out-of-State sales of calves, but excludes inter-farm sales.

² Excludes custom slaughter for use on farms where produced.

CATTLE AND CALVES: Inventory and disposition, State of Hawaii, 2002-2006

Year	Inventory beginning January 1	Calf crop	Inshipments	Marketings	Farm slaughter	Deaths	Inventory January 1 following year
				<i>1,000 head</i>			
2002	152	63	*	58	1	5	151
2003	151	66	*	55	1	5	156
2004	156	63	*	58	1	5	155
2005	155	66	*	54	1	5	161
2006	161	65	*	61	1	6	158

* = Less than 500.

CATTLE AND CALVES: Exports by weight and sex, State of Hawaii, 2002-2006

Year	Total	By weight category		By sex class		
		Cattle ¹	Calves ²	Steers	Heifers	Others
				<i>1,000 head</i>		
2002	42	4	38	25	17	NA
2003	44	3	41	25	19	NA
2004	43	9	34	26	17	NA
2005	42	3	39	22	18	2
2006	46	5	41	27	17	2

NA = Not available.

¹ 500 pounds or more.

² 499 pounds or less.


CATTLE: Commercial slaughter and farm price, State of Hawaii, 2002-2006¹

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
------	------	------	------	------	-----	------	------	------	------	------	------	------	------------------

Number of head² – 1,000 head

2002	1.1	.9	1.0	.9	1.0	.9	1.1	1.1	.9	1.0	1.0	.8	11.6
2003	.8	.9	.8	1.0	.9	.9	1.1	.9	.9	.9	.8	.7	10.8
2004	.9	.8	.9	.8	.9	.8	1.0	1.1	.9	.9	.9	.8	10.5
2005	.7	.7	.8	.9	.8	.8	.7	.8	.7	.7	.8	.9	9.2
2006	.8	.8	1.0	.8	1.0	.9	.9	1.0	.9	.9	.7	.8	10.5

Pounds slaughtered, dressed weight^{2,3} – 1,000 pounds

2002	592	488	565	553	544	516	597	646	538	591	567	471	6,668
2003	484	530	485	551	525	488	626	545	525	516	461	441	6,176
2004	570	456	551	472	511	461	599	625	501	502	482	446	6,176
2005	397	385	469	512	453	497	437	504	430	444	456	483	5,466
2006	447	446	567	455	556	525	539	610	535	520	438	450	6,088

Average farm price, dressed weight – cents per pound

2002	63.5	65.0	63.5	65.0	67.5	65.5	63.0	64.5	63.0	62.5	68.0	71.0	65.0
2003	68.0	66.0	68.0	65.0	69.0	70.5	70.5	69.5	69.5	72.0	73.0	77.5	70.0
2004	71.0	74.0	74.5	72.5	72.0	79.0	72.0	71.0	76.0	76.5	75.0	80.0	74.0
2005	81.5	79.5	77.5	77.0	80.5	83.5	82.5	80.5	82.0	82.0	84.0	79.5	80.5
2006	77.0	82.5	80.5	80.0	81.0	79.5	78.0	80.5	79.5	79.0	82.5	81.5	80.0

¹ Includes custom slaughter for home use.

² Sum of monthly estimates may not add to annual total due to rounding.

³ To convert dressed weight to live weight, divide dressed weight by 0.549 or multiply by a factor of 1.8215.

CATTLE: Local marketings and farm price, State of Hawaii, 1994-2006¹

Year	Steers and heifers			Cows		
	Marketings (dressed weight)	Average price		Marketings (dressed weight)	Average price	
		Live weight ²	Dressed weight		Live weight ²	Dressed weight
	1,000 pounds	----- Cents per pound -----		1,000 pounds	----- Cents per pound -----	
1994	3,818	47.6	87.0	4,478	32.9	60.0
1995	2,596	³ 49.2	89.5	4,529	29.8	54.5
1996	3,777	47.3	86.0	5,486	27.5	50.0
1997	3,762	47.1	86.0	5,029	28.8	52.5
1998	4,337	45.6	83.0	6,282	27.2	49.5
1999	2,980	44.8	81.5	4,620	27.6	50.0
2000	5,308	44.3	80.5	4,501	27.4	50.0
2001	2,692	50.9	92.5	3,060	28.7	52.5
2002	³ 5,040	47.8	87.0	³ 2,877	29.0	53.0
2003	3,067	50.1	91.5	1,891	27.6	50.5
2004	6,023	³ 52.4	³ 95.5	³ 1,652	27.7	50.5
2005	4,505	55.2	100.5	1,086	27.8	50.5
2006	5,553	60.3	110.0	1,741	29.2	53.0

¹ Excludes out-of-State shipments.

² Live weight average price is derived by dividing the unrounded average dressed weight price by 1.8215 or multiplying by 0.549.

³ Revised.



**MILK: Number of operations, number of milk cows, production, sales, price, and value,
by county, 2002-2006**

Year	Operations ¹	Annual average milk cows	Milk per cow	Production ²	Sold ²	Average price ³	Value of sales
	----- Number -----		Pounds	----- Million pounds -----		Dollars per hundredweight	1,000 dollars
State							
2002	30	6,600	14,667	96.8	95.2	23.60	22,467
2003	30	6,500	14,154	92.0	90.5	23.70	21,449
2004	30	6,100	13,197	80.5	78.5	25.70	20,175
2005	30	5,400	12,889	69.6	68.1	27.00	18,387
2006	30	4,300	13,256	57.0	55.8	26.00	14,508
County:							
Hawaii/Kauai ⁴							
2002	24	3,100	11,484	35.6	34.3	23.50	8,066
2003	24	3,200	11,000	35.2	33.9	23.40	7,947
2004 ⁵							
2005 ⁵							
2006 ⁵							
Honolulu							
2002	6	3,500	17,486	61.2	60.9	23.70	14,401
2003	6	3,300	17,212	56.8	56.6	23.90	13,502
2004 ⁵							
2005 ⁵							
2006 ⁵							

¹ Includes commercial, licensed dairies as well as farms with only a few cows.

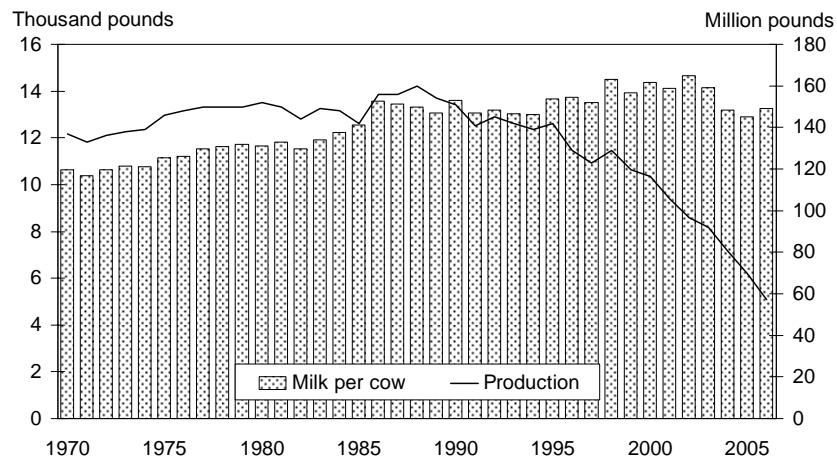
² Difference between "Production" and "Sold" is milk used on farms for human consumption, fed to calves or other uses.

³ Rounded to the nearest dime.

⁴ Kauai combined with Hawaii to avoid disclosure of individual operations.

⁵ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

**MILK: Production and Milk per Cow Annual Basis,
State of Hawaii, 1970-2006**




MILK: Number of cows, milk production, price, and milkfat, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
------	------	------	------	------	-----	------	------	------	------	------	------	------	------------------

Average number of milk cows on hand during month – 1,000 head

2002	6.7	6.7	6.7	6.8	6.7	6.7	6.7	6.4	6.4	6.5	6.6	6.6	6.6
2003	6.6	6.6	6.5	6.4	6.5	6.3	6.4	6.5	6.6	6.6	6.6	6.5	6.5
2004	6.5	6.5	6.4	6.4	6.2	6.1	6.0	5.9	6.0	5.8	5.7	5.8	6.1
2005	5.8	5.7	5.6	5.5	5.4	5.2	5.3	5.4	5.3	5.2	5.1	5.0	5.4
2006	4.6	4.4	4.4	4.5	4.3	4.3	4.3	4.2	4.2	4.1	3.9	3.8	4.3

Average monthly production per all cows in herd – pounds

2002	1,210	1,150	1,300	1,295	1,315	1,210	1,270	1,235	1,170	1,140	1,120	1,195	14,667
2003	1,225	1,150	1,275	1,265	1,275	1,255	1,250	1,170	1,060	1,060	1,015	1,140	14,154
2004	1,125	1,060	1,205	1,125	1,210	1,230	1,165	1,085	935	985	1,020	1,015	13,197
2005	1,000	980	1,125	1,125	1,205	1,210	1,150	1,095	1,020	1,020	980	1,040	12,889
2006	1,150	1,090	1,180	1,065	1,185	1,140	1,165	1,145	1,050	1,025	1,025	1,185	13,256

Milk production – million pounds

2002	8.1	7.7	8.7	8.8	8.8	8.1	8.5	7.9	7.5	7.4	7.4	7.9	96.8
2003	8.1	7.6	8.3	8.1	8.3	7.9	8.0	7.6	7.0	7.0	6.7	7.4	92.0
2004	7.3	6.9	7.7	7.2	7.5	7.5	7.0	6.4	5.6	5.7	5.8	5.9	80.5
2005	5.8	5.6	6.3	6.2	6.5	6.3	6.1	5.9	5.4	5.3	5.0	5.2	69.6
2006	5.3	4.8	5.2	4.8	5.1	4.9	5.0	4.8	4.4	4.2	4.0	4.5	57.0

Average price for milk sold to plants – dollars per hundredweight

2002	24.00	24.10	23.70	23.80	23.70	23.40	23.30	23.30	23.30	23.50	23.70	23.40	23.60
2003	23.40	23.00	22.90	22.60	22.80	22.70	22.90	24.40	25.30	25.30	25.20	24.70	23.70
2004	24.10	23.90	24.20	25.40	28.00	29.40	27.00	25.10	25.00	25.20	25.10	25.30	25.70
2005	28.60	26.90	27.20	27.00	27.40	26.40	26.40	26.90	26.80	26.70	26.80	26.80	27.00
2006	26.80	26.20	25.50	25.10	24.90	24.80	24.90	26.40	26.70	26.90	27.00	26.90	26.00

Average milkfat for milk sold to plants – percent

2002	3.47	3.46	3.39	3.45	3.46	3.49	3.47	3.50	3.46	3.49	3.52	3.52	3.47
2003	3.47	3.51	3.44	3.41	3.41	3.42	3.47	3.48	3.53	3.59	3.61	3.62	3.49
2004	3.61	3.52	3.53	3.50	3.44	3.43	3.45	3.46	3.56	3.62	3.62	3.58	3.52
2005	3.57	3.47	3.43	3.45	3.40	3.39	3.25	3.33	3.42	3.37	3.36	3.40	3.40
2006	3.37	3.38	3.39	3.41	3.36	3.30	3.37	3.33	3.37	3.38	3.34	3.37	3.36



HOGS

HOGS AND PIGS: December 1 inventory by classes and weight, State of Hawaii, 2002-2006

Year	All hogs and pigs	Breeding	Market				
			Total	Under 60lbs.	60-119 lbs.	120-179 lbs.	180 lbs. and over
1,000 head							
2002	24	5	19	8	5	4	2
2003	23	5	18	8	5	3	2
2004	22	5.2	16.8	7.6	4.4	3.2	1.6
2005	19	5.0	14.0	6.0	3.9	2.4	1.7
2006	16	4.1	11.9	5.5	3.0	2.0	1.4

HOGS AND PIGS: December 1 inventory by class, by county, 2002-2006

Year	All hogs and pigs	Breeding	Total market	Year	All hogs and pigs	Breeding	Total market
<i>1,000 head</i>				<i>1,000 head</i>			
County: Hawaii				Kauai			
2002	2.8	.3	2.5	2002	2.1	.3	1.8
2003	2.2	.4	1.8	2003	2.0	.3	1.7
2004	1.4	.3	1.1	2004	2.2	.5	1.7
2005	1.1	.3	.8	2005	2.0	.4	1.6
2006	.9	.3	.6	2006	2.0	.3	1.7
Honolulu				Maui			
2002	12.8	2.8	10.0	2002	6.3	1.6	4.7
2003	13.5	2.7	10.8	2003	5.3	1.3	4.0
2004	13.0	2.5	10.5	2004	5.4	1.9	3.5
2005	11.4	2.8	8.6	2005	4.5	1.5	3.0
2006	9.6	2.5	7.1	2006	3.5	1.0	2.5



**HOGS: Number of operations, number and pounds sold, price, and value,
by county, 2002-2006**

Year	Operations	Number sold ¹	Pounds sold (live weight) ²	Farm price (live weight)	Value of sales
	<i>Number</i>	<i>1,000 head</i>	<i>1,000 pounds</i>	<i>Dollars per hundredweight</i>	<i>1,000 dollars</i>
State³					
2002	210	30	5,700	84.00	4,788
2003	210	27	5,130	84.70	4,345
2004	250	27	5,130	87.00	4,463
2005	230	26	5,070	89.80	4,553
2006	230	23	4,485	92.70	4,158
County:					
Hawaii					
2002	60	3.7	691	81.00	560
2003	60	2.8	530	83.00	440
2004	70	2.6	484	84.00	407
2005	70	1.8	369	86.50	319
2006	70	1.5	303	84.50	256
Honolulu					
2002	70	18.0	3,446	85.90	2,960
2003	70	15.5	3,016	86.00	2,594
2004	80	15.7	3,085	88.00	2,715
2005	70	15.6	3,069	90.00	2,762
2006	70	12.9	2,591	91.50	2,371
Kauai					
2002	30	3.3	528	81.50	430
2003	30	3.3	490	84.50	414
2004	40	3.6	545	88.50	482
2005	30	3.7	643	92.00	592
2006	30	3.7	596	102.50	611
Maui					
2002	50	5.0	1,035	81.00	838
2003	50	5.4	1,094	82.00	897
2004	60	5.1	1,016	84.50	859
2005	60	4.9	989	89.00	880
2006	60	4.9	995	92.50	920

¹ Excludes interfarm sales; includes custom slaughter for home use; includes direct sales on farms to consumers. Excludes live hogs brought in for immediate slaughter.

² Excludes custom slaughter for use on farms where produced and interfarm sales.

³ Sum of county estimates may not add to State total due to rounding. Sales and value data are for the 12-month period, December of the previous year through November of the following year.



HOGS: Commercial slaughter and farm price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average
------	------	------	------	------	-----	------	------	------	------	------	------	------	------------------

Number of head^{1 2} – 1,000 head

2002	2.7	2.5	2.6	2.7	2.8	2.6	2.8	2.8	2.4	2.6	2.6	3.1	32.1
2003	2.6	2.2	2.3	2.3	2.5	2.5	2.6	2.4	2.2	2.4	2.2	2.9	29.3
2004	2.4	2.0	2.3	2.3	2.3	2.4	2.5	2.5	2.2	2.2	2.3	3.0	28.3
2005	2.0	1.9	2.0	1.9	2.0	1.9	1.9	1.8	1.9	1.7	2.0	2.4	23.5
2006	1.8	1.7	1.8	1.7	2.0	2.2	1.9	2.0	1.8	1.8	1.8	2.2	22.5

Pounds slaughtered, dressed weight^{1 2 3} – 1,000 pounds

2002	415	391	423	419	450	412	433	461	374	428	397	489	5,092
2003	398	347	384	369	395	396	418	377	347	372	343	440	4,583
2004	353	311	338	344	356	359	373	386	331	347	354	447	4,297
2005	302	287	312	299	328	311	318	306	310	285	338	387	3,784
2006	304	276	301	294	333	368	322	336	319	322	301	360	3,836

All hogs, average farm price, dressed weight⁴ – cents per pound

2002	111.5	113.5	111.5	111.5	111.0	111.5	113.5	111.5	112.5	110.0	113.0	114.5	112.0
2003	112.5	113.0	113.0	111.0	112.0	112.0	111.0	111.0	115.0	114.0	114.0	117.0	113.0
2004	115.0	116.5	115.5	114.5	114.5	116.0	116.0	116.5	116.5	117.0	116.5	118.5	116.0
2005	119.5	120.5	120.0	121.0	118.0	119.5	121.5	120.5	118.5	121.0	119.5	122.5	119.5
2006	123.0	125.5	122.5	122.5	124.0	126.5	123.5	122.0	124.5	124.0	127.0		123.5

Market hogs, average farm price, dressed weight⁴ – cents per pound

2002	115.5	116.0	116.5	115.5	115.0	115.5	116.0	116.5	116.5	115.0	117.5	117.0	116.0
2003	116.0	117.0	117.5	117.0	116.5	116.0	117.0	117.0	118.0	118.0	117.5	119.0	117.0
2004	119.0	119.5	119.5	118.5	119.5	119.5	120.0	120.0	121.0	120.5	120.5	123.0	119.5
2005	123.0	124.0	124.0	124.0	124.0	125.5	125.0	125.5	124.5	125.0	124.0	127.5	124.0
2006	127.0	128.5	127.5	126.0	127.0	131.5	130.0	129.5	129.0	128.5	131.5		128.5

¹ Excludes non-inspected farm slaughter; includes custom slaughter and live hog inshipments from the mainland for slaughter.

² Sum of monthly estimates may not add to annual total due to rounding.

³ To convert dressed weight to live weight, divide dressed weight by 0.75 or multiply by a factor of 1.3333.

⁴ Annual average price is for the 12-month period, December of the previous year through November of the following year.

HOGS AND PIGS: Inventory and disposition, State of Hawaii, 2002-2006

Year	Inventory December 1 previous year	Pig crop	Inshipments ¹	Marketings ¹	Farm slaughter	Deaths	Inventory December 1
<i>1,000 head</i>							
2002	27	32	*	30	1	4	24
2003	24	31	*	27	1	4	23
2004	23	31	*	27	1	4	22
2005	22	28	*	26	1	4	19
2006	19	25	*	23	1	4	16

* = Less than 500 head.

¹ Excludes live hogs brought in for immediate slaughter.



Egg production for 2006 totaled 98.3 million eggs, 14 percent below the 114.5 million eggs produced during 2005. The average number of layers on hand during 2006 was 448,000, down 10 percent from 2005.

The average farm price for a dozen eggs was \$1.00 in 2006, 6 percent higher than the 2005 average farm price of 94.1 cents per dozen. Cash receipts from the sale of eggs during

2006 totaled \$8.2 million, down 9 percent from 2005.

The total number of egg-type chickens on hand in Hawaii on December 1, 2006 was 470,000 birds, 14 percent below 2005. The 470,000 birds consisted of 415,000 layers and 55,000 non-laying pullets. The 415,000 layers were 15 percent less than a year ago.

CHICKENS: December 1 inventory by class, by county, 2002-2006

Year	All chickens (excluding broilers)	Number of layers			Non-laying pullets		Other chickens (excluding broilers)
		Hens 1 year +	Pullets under 1 year	Total	Over 3 months	Under 3 months	
Thousands							
State							
2002	625	381	142	523	44	58	*
2003	600	357	129	486	67	47	*
2004	598	349	158	507	44	47	*
2005	547	369	117	486	25	36	*
2006	470	293	122	415	20	35	*
County:							
Hawaii/Kauai/Maui ¹							
2002	130	89	37	126	0	4	*
2003	118	100	11	111	5	2	*
2004	131	78	48	126	5	0	*
2005	104	67	30	97	3	4	*
2006 ²							
Honolulu							
2002	495	292	105	397	44	54	*
2003	482	257	118	375	62	45	*
2004	467	271	110	381	39	47	*
2005	443	302	87	389	22	32	*
2006 ²							

* = Less than 500.

¹ Kauai and Maui combined with Hawaii to avoid disclosure of individual operations.

² Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.



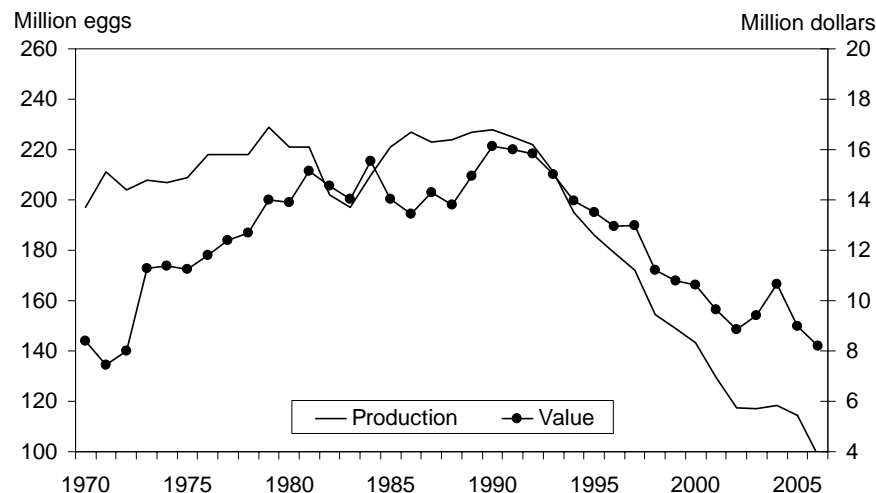
POULTRY

EGGS: December 1 number of operations, number of layers, production, price, and value, by county, 2002-2006¹

Year	Operations	Average number of layers	Average production per layer	Production ²	Average price ³	Value of sales
	<i>Number</i>	<i>1,000 birds</i>	<i>Eggs</i>	<i>Million eggs</i>	<i>Cents per dozen</i>	<i>1,000 dollars</i>
State⁴						
2002	80	539	218	117.5	90.4	⁵ 8,852
2003	80	507	231	117.2	96.2	9,396
2004	80	500	237	118.5	108.0	⁵ 10,670
2005	80	498	230	114.5	94.1	8,979
2006	80	448	219	98.3	100.0	8,192
County:						
Hawaii/Kauai/Maui⁶						
2002	65	126	229	28.9	105.5	2,540
2003	65	116	251	29.1	107.5	2,607
2004	65	122	227	27.7	110.0	2,539
2005	65	112	220	24.8	110.0	2,274
2006⁷						
Honolulu						
2002	15	413	215	88.6	85.5	⁵ 6,312
2003	15	391	225	88.1	92.5	6,789
2004	15	378	240	90.8	107.5	⁵ 8,131
2005	15	386	232	89.7	89.5	6,705
2006⁷						

¹ Annual number of layers, egg production, sales, price, and value are for the 12-month period, December of the previous year through November of the following year. ² Home consumption less than 0.5 million eggs included. ³ Equivalent delivered processing plant. ⁴ Sum of county estimates may not add to State total due to rounding. ⁵ Revised. ⁶ Kauai and Maui combined with Hawaii to avoid disclosure of individual operations. ⁷ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

EGGS: Production and Value of Sales, State of Hawaii, 1970-2006





EGGS: Number of layers, production, and price, State of Hawaii, 2002-2006

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total or average ¹
------	------	------	------	------	-----	------	------	------	------	------	------	------	-------------------------------

Average number of layers on hand during month – 1,000 layers

2002	547	538	543	545	524	532	540	538	537	537	534	532	539
2003	526	509	519	514	487	494	504	505	499	500	499	482	507
2004	492	501	504	505	502	504	495	497	501	505	512	512	500
2005	511	500	506	504	486	488	487	491	496	496	495	479	498
2006	478	475	467	461	446	445	438	429	427	419	417		448

Egg production² – million eggs

2002	10.0	9.0	10.3	10.1	9.9	9.6	10.0	9.6	9.1	9.8	9.8	10.0	117.5
2003	10.2	9.0	10.0	10.0	9.8	9.3	9.7	10.0	9.7	9.9	9.6	9.7	117.2
2004	9.7	9.3	10.5	10.3	10.2	9.7	10.0	10.0	9.5	9.9	9.7	10.1	118.5
2005	10.4	9.4	10.1	9.4	9.4	9.3	9.9	9.5	8.8	9.2	9.0	8.8	114.5
2006	8.8	7.9	8.7	8.3	8.3	8.2	8.6	8.2	7.6	7.6	7.3		98.3

Average farm price³ – cents per dozen

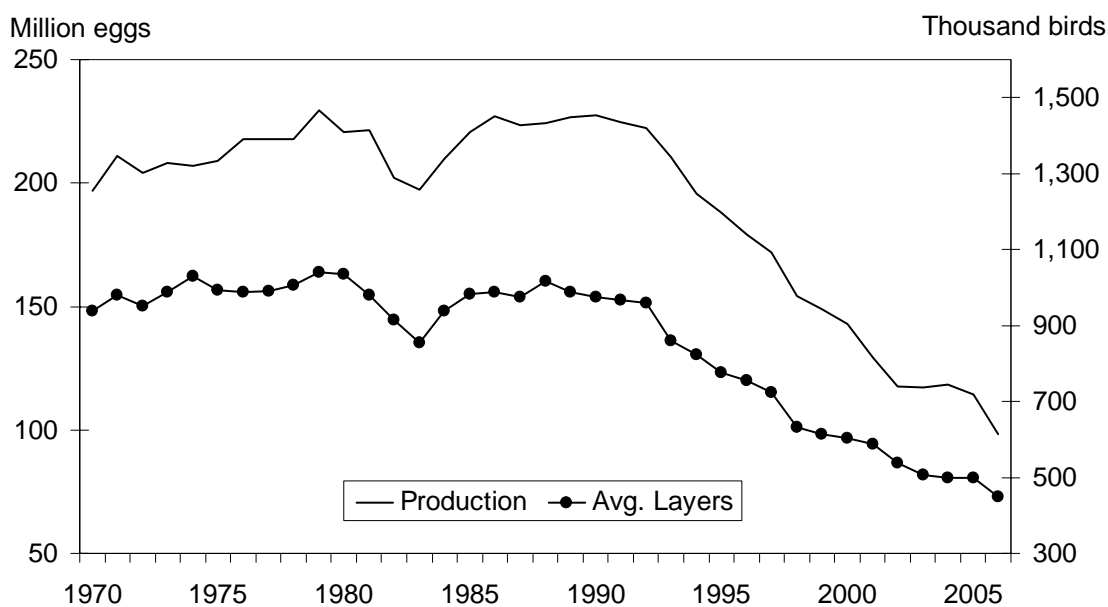
2002	91.5	91.5	90.5	91.0	89.5	89.5	90.0	90.0	88.5	90.0	92.0	93.0	90.4
2003	94.0	94.5	95.5	97.5	98.5	97.5	97.0	97.5	94.5	96.0	99.5	101.5	96.2
2004	106.5	110.0	113.5	115.0	114.0	110.0	109.0	107.5	105.5	103.0	100.0	97.0	108.0
2005	99.5	98.0	94.0	94.0	88.5	88.5	91.5	89.5	87.0	102.5	98.5	106.5	94.1
2006	108.0	104.5	95.0	100.0	98.0	97.0	97.0	93.5	98.5	100.5	101.0		100.0

¹ Annual data are for the 12-month period, December of the previous year through November of the following year.

² Sum of monthly estimates may not add to annual total due to rounding.

³ Equivalent delivered processing plant.

CHICKENS: Production and Average Number of Layers, State of Hawaii, 1970-2006





EQUINE, GOATS, HONEY AND BEESWAX, SHEEP

EQUINE: January 1 inventory and number sold, State of Hawaii, 1992-2002

Year	Inventory	Number sold
<i>1,000 head</i>		
1992	4.0	.2
1997	5.1	.2
2002	4.6	.3

Source: Census of Agriculture. Data just for on-farm equine, excludes non-farm equine.

GOATS: January 1 inventory and number sold, State of Hawaii, 1992-2002

Year	Inventory	Number sold
<i>1,000 head</i>		
1992	5.0	3.0
1997	3.3	3.6
2002	5.4	4.2

Source: Census of Agriculture.

HONEY AND BEESWAX: Number of operations, colonies, yield, production, price, and value, State of Hawaii, 2002-2006

Year	Operations	Number of colonies	Yield per colony (honey)	Production		Average price ¹		Value of production	
				Honey (extracted)	Beeswax	Honey (extracted)	Beeswax	Honey (extracted)	Beeswax
	<i>Number</i>	<i>Thousands</i>	<i>Pounds</i>	<i>----- 1,000 pounds -----</i>		<i>----- Cents per pound -----</i>		<i>----- 1,000 dollars -----</i>	
2002	30	7	136	952	15	111	193	1,057	29
2003	29	7	114	798	11	145	182	1,157	20
2004	31	8	96	768	11	159	182	1,221	20
2005	34	9	131	1,179	10	143	182	1,686	18
2006	35	10	93	930	29	119	238	1,107	69

¹ Average of unprocessed bulk and processed packaged honey sold at wholesale and processed packaged honey sold at retail by farmers.

SHEEP AND LAMBS: January 1 inventory by class, State of Hawaii, 2002-2006

Year	All sheep and lambs	Breeding				Market			Lamb crop
		Total	Ewes 1 year +	Rams 1 year +	Replacement lambs	Total	Lambs	Sheep	
1,000 head									
2002	20	14	6	3	5	6	4	2	5
2003	20	13	6	3	4	7	4	3	5
2004	20	13	6	3	4	7	5	2	5
2005 ¹									
2006 ¹									

¹ Data not shown to avoid disclosure of individual operations.



- AGRICULTURAL LABOR
- AGRICULTURAL THEFT AND/OR VANDALISM
- AQUACULTURE





**AGRICULTURAL LABOR: Workers on farms, annual and quarterly averages,
State of Hawaii, 2002-2006 ¹**

Year	Total farm employment			Hired workers by type of farm		
	Self-employed farm operators	Unpaid workers ²	Hired workers ³	Sugar	Pineapple	Other
2002	⁴ 3,000	⁴ 1,100	7,500	900	1,300	5,400
2003	NA	NA	7,300	700	1,200	5,300
2004	NA	NA	7,300	700	1,200	5,400
2005	NA	NA	7,000	700	1,100	5,200
2006	NA	NA	7,000	600	1,000	5,400
January	NA	NA	7,100	650	1,050	5,400
April	NA	NA	6,800	600	900	5,300
July	NA	NA	7,000	650	1,000	5,350
October	NA	NA	7,000	650	950	5,400

NA = Not available. Beginning July 2002, data series discontinued.

¹ Averages are based on data collected from the January, April, July and October surveys.

² Includes family members and others working 15 or more hours per week.

³ Sum of hired workers by type of farm may not add to hired workers total due to rounding.

⁴ Beginning July 2002, estimates for self-employed and unpaid workers have been discontinued due to a change in the national labor statistics program.

**AGRICULTURAL LABOR: Annual average number of workers on farms,
by county, 2002-2006 ¹**

Year	Self-employed farm operators	Unpaid workers ²	Hired workers	Year	Self-employed farm operators	Unpaid workers ²	Hired workers
County: Hawaii				Kauai			
2002	³ 1,700	³ 600	2,450	2002	³ 250	³ 100	750
2003	NA	NA	2,750	2003	NA	NA	750
2004	NA	NA	2,700	2004	NA	NA	650
2005	NA	NA	2,500	2005	NA	NA	700
2006	NA	NA	2,650	2006	NA	NA	700
Honolulu				Maui			
2002	³ 550	³ 250	2,100	2002	³ 500	³ 150	2,250
2003	NA	NA	2,150	2003	NA	NA	1,650
2004	NA	NA	2,200	2004	NA	NA	1,800
2005	NA	NA	2,050	2005	NA	NA	1,700
2006	NA	NA	1,950	2006	NA	NA	1,750

NA = Not available. Beginning July 2002, data series discontinued.

¹ Averages are based on data collected from the January, April, July, and October surveys.

² Includes family members and others working 15 or more hours per week.

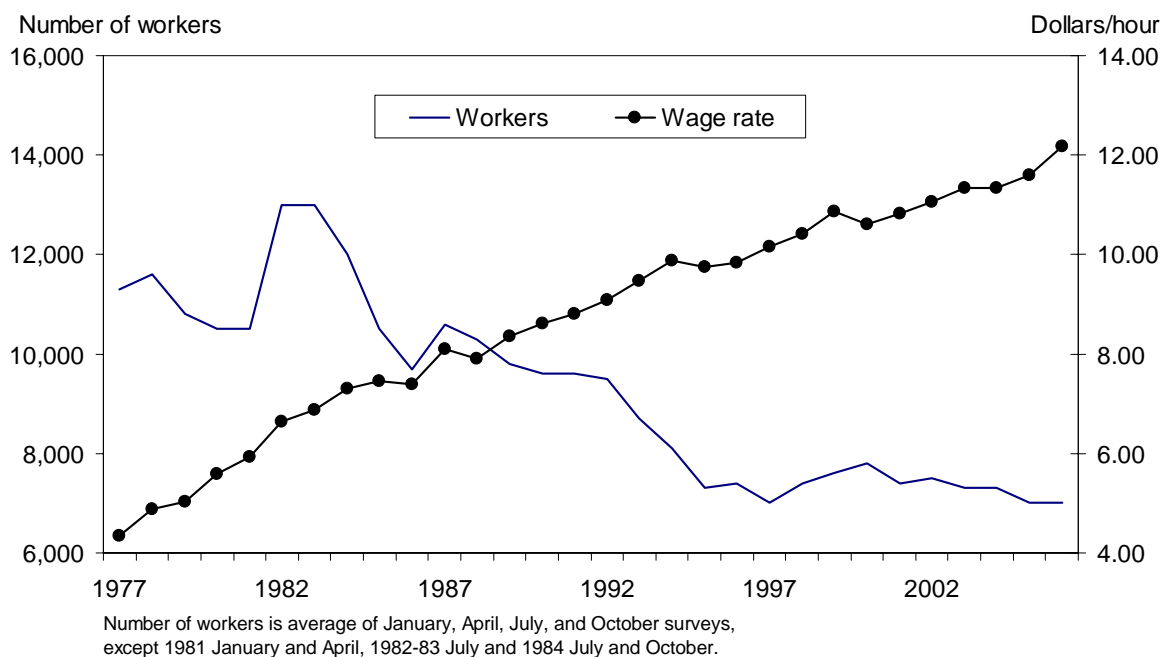
³ Beginning July 2002, estimates for self-employed and unpaid workers have been discontinued due to a change in the national labor statistics program.



HIRED AGRICULTURAL LABOR: Wage rates for type of worker and all hired workers, annual and quarterly averages, State of Hawaii, 2002-2006

Year	All farms		Farms with 1-9 workers	
	Field/livestock	All hired workers	Field/livestock	All hired workers
<i>Dollars per hour</i>				
2002	9.42	11.07	8.26	9.66
2003	9.60	11.33	8.52	9.62
2004	9.75	11.34	8.99	10.29
2005	10.00	11.59	9.19	10.25
2006	10.32	12.18	9.46	10.78
January	10.27	11.95	9.73	10.82
April	9.93	11.96	9.16	10.30
July	10.38	12.31	8.98	10.66
October	10.69	12.47	9.78	11.16

Hired Workforce and Average Wage Rate, State of Hawaii, 1977-2006





HAWAII AGRICULTURAL THEFT AND/OR VANDALISM

The Hawaii Field Office of the USDA's National Agricultural Statistics Service conducted a special survey of Hawaii's farmers on their exposure to agricultural theft and/or vandalism. The total value of theft and/or vandalism losses, as well as security costs, from Hawaii farms is estimated at \$11.4 million or 8% of the 2004 Hawaii net farm income of \$135 million estimated by USDA, Economic Research Service. Total theft of farm commodities,

materials, equipment, and other property is pegged at \$1.9 million. Statewide vandalism cost to farms in Hawaii totaled \$2.0 million. Total security costs to prevent theft and/or vandalism totaled \$7.4 million. A special note of acknowledgment goes to the Hawaii Farm Bureau Federation (HFBB). This survey was conducted with funds from the State of Hawaii, Department of Agriculture and co-sponsored by the HFBB.

Theft and/or vandalism losses and security measure costs, by county, 2004

County	Losses		Security measure costs	Total
	Theft	Vandalism ¹		
1,000 dollars				
Hawaii	634	192	3,119	3,945
Honolulu	798	568	2,553	3,919
Kauai	185	99	893	1,177
Maui	329	1,160	835	2,324
Total	1,946	2,019	7,400	11,365

¹ A large vandalism event occurred during 2004 and was reported by one of our respondents. We consider this event a statistical aberration. We have omitted this event and summarized the remaining data to acquire what we consider a truer picture of agricultural vandalism for the State of Hawaii.

Theft by category, State of Hawaii, 2004

Type of theft	Number of incidents	Amount of loss
<i>1,000 dollars</i>		
Crop	2,900	562
Livestock	284	262
Chemical/Fertilizer	127	55
Machinery/Equipment	608	839
Other Property	820	228
Total	4,739	1,946

Vandalism by category, State of Hawaii, 2004

Type of theft	Number of incidents	Amount of loss
<i>1,000 dollars</i>		
Crop	263	1,026
Livestock	61	299
Chemical/Fertilizer	23	4
Machinery/Equipment	169	465
Other Property	637	225
Total	1,153	2,019


AQUACULTURE: Number of operations, production, and value, by county, 2002-2006

Aquaculture: Number of Operations, Production, and Value, by County, 2002-2006									
Year	Operations	Production		Value					
		Shellfish	Finfish	Shellfish	Finfish	Algae	Ornamental	Other ¹	Total
<i>Number ----- 1,000 pounds ----- ----- 1,000 dollars -----</i>									
State									
2002	70	1,378	542	8,212	2,683	10,505	664	3,116	25,180
2003	85	1,312	397	9,719	1,740	11,848	752	3,591	27,650
2004	100	956	484	8,326	1,975	12,602	520	4,677	28,100
2005	70	²	²	²	²	14,637	²	²	28,398
2006	80	180	426	2,351	2,388	11,914	345	4,259	21,257
County:									
Hawaii									
2002	26	269	³	3,050	³	9,627	³	³	17,329
2003	31	572	³	5,508	³	10,923	³	³	19,639
2004	39	450	³	5,593	³	11,702	³	³	21,211
2005	25	²	²	²	²	³	²	²	20,179
2006	25	103	3	1,834	3	3	3	3	17,470
Honolulu/Kauai/Maui									
2002	44	1,109	³	5,162	³	878	³	³	7,851
2003	54	740	³	4,211	³	925	³	³	8,011
2004	61	506	³	2,733	³	900	³	³	6,889
2005	45	²	²	²	²	³	²	²	8,219
2006	55	77	3	517	3	3	3	3	3,787

¹ Includes seed stock, brood stock, and items not sold by weight.

² 2005 Census of Aquaculture breakout of categories was not available to avoid disclosure of individual operations with other states.

³ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.



DEFINITION OF TERMS

- ♦ **Agriculture** entails all operations performed on a “farm” in connection with planting, growing, and harvesting of crops; raising and feeding of livestock and poultry, and management. All operations in connection with preparation of farm products for market where the preparation does not alter the form of the product and transportation to the first delivery point. In Hawaii, the first delivery point is defined as the processing plant or packinghouse door or other receivers’ establishment for marketings on the island of production. For off-island marketings, the first delivery point is generally the shipper’s warehouse.
- ♦ **Farm** is a place with estimated (or expected) annual sales of agricultural products of at least \$1,000.
- ♦ **Crop Production** is the estimated amount of crop harvested and transferred at the first delivery point. Production estimates of vegetables and fruits include the quantity for fresh market and processing use.
- ♦ **Acreage In Crop** is the total acreage standing in a specific crop regardless of age or condition unless it has been declared abandoned by the operator.
- ♦ **Acreage Harvested** is the total area harvested or partially harvested during the reporting period. A permanent or semi-permanent planting that was harvested for only a portion of the year is counted in its entirety. Acreage lost before maturity due to natural or economic factors is not included. Acreage harvested and planted repeatedly during the year is counted each time.
- ♦ **Yield** is the average production per acre of merchantable quality harvested and sold or utilized. This is derived by dividing total production by harvested acres.
- ♦ **Livestock Operation** is defined as a place that has one or more head of the species on hand at any time during the year. It does not have to meet the definition of a farm.
- ♦ **Livestock Production** is the estimated amount of livestock and livestock products sold. This includes allowance for amounts used on farms where produced.
- ♦ **Farm Price** is a computed price to value agricultural production which may or may not reflect the average price at which actual transfer of ownership took place but which is comparable with the definition of “agriculture”. See “agriculture” for the definition of pricing point.
- ♦ **Market Supply** includes pounds of product sold in Hawaii to both Armed Forces and civilians (outshipments excluded). Direct inshipments to the Armed Forces are excluded.



The Hawaii Field Office of USDA, National Agricultural Statistics Service, uses a variety of sampling techniques to produce current agricultural statistics about crops, livestock, prices, farm labor, and other information relating to the agricultural economy.

Data is collected and summarized; estimates are prepared. These estimates then pass through the Agricultural Statistics Board of the U.S. Department of Agriculture where, for major items, Hawaii estimates become part of National totals and enter the official data base for agriculture. National and State estimates are published according to a schedule set one year in advance.

The Hawaii Field Office conducts many of its surveys by virtually complete **ENUMERATION** of certain parts of the population. This is unusual compared to procedures in other states but is feasible in Hawaii due to the relatively small size of certain categories of the farm universe or the extreme concentration of ownership.

- ◆ **List Sampling** is a common means of data collection. Lists of farm operators are well suited for the low cost collection of information by mail. Supplementary information is included within the frame that allows the use of efficient stratified sample designs. A major disadvantage of this method is the constant change in the list

frame which can never be perfect. In Hawaii, cattle, hog, macadamia nut, and coffee surveys are example of stratified list sample designs.

- ◆ **Area Frame Sampling** can be used alone or in conjunction with the list frame. The frame consists of an aggregation of identifiable units of land or segments which may be sampled. The frame is complete and does not suffer the type of deterioration over time as does a list frame.
- ◆ **Multiple-Frame Sampling** is the use of two frames. It takes advantage of the best attributes of the area frame and the list frame, produces unbiased estimates, and allows measurement of the sampling error.
- ◆ **Objective Yield Surveys** provide information from direct counts, measurements and weights of the crop made from small plots in a probability selection of sample fields.
- ◆ **Administrative Data** is used in addition to producer surveys to establish final production and marketings. These include processor receipts, slaughter, vacuum cooler volume, and inspections. Unloads at Honolulu and wholesale prices, as reported by the Market Analysis and News Branch, are an important check data source.



Where can I get more statistics or economic analysis?

National Agricultural Statistics Service (NASS) publications include weekly, monthly, quarterly, and annual estimates of production, stocks, inventories, dispositions, utilization, and process of agricultural commodities and other items. The Census of Agriculture is published every five years covering all commodities by state, county, and zip code. Other census reports include the Agricultural Atlas, Agricultural Economics & Land Ownership, Aquaculture, Census History, Congressional Tabulations, Farm & Ranch Irrigation, Horticulture Specialties, and Outlying Areas.

Economic Research Service (ERS) Situation and Outlook Reports and periodicals analyze the current situation and forecast market conditions. ERS monographs offer economic analysis in the area of trade, production, rural development, farm inputs, and other topics.

The World Agricultural Outlook Board (WAOB) issues regular forecasts of U.S. and world supply and demand prospects for major agricultural commodities.

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