

1998 AGRICULTURAL CHEMICAL USE ESTIMATES FOR VEGETABLE CROPS

Overview

This report, which summarizes the use of agricultural chemicals on vegetables in 1998, is issued by the New York Agricultural Statistics Service (NYASS) as part of its series on Agricultural Chemical Usage. Other publications in the series present statistics for on-farm agricultural chemical usage for field crops and fruits.

Information in this report is obtained from a survey funded by the USDA Pesticide Data Program. The purpose of the Pesticide Data Program is to provide reliable pesticide use statistics and enhance the quality of information on pesticide residues in food. Multiple agencies within the USDA administer this program. This data series addresses the increased public interest in agricultural chemical use and provides the means for government agencies to respond effectively to food safety and water quality issues.

The National Agricultural Statistics Service (NASS) collects on-farm agricultural chemical use information to support the evaluation of food safety and water quality issues. The Economic Research Service (ERS) conducts research on the impact of alternative pesticide regulations, policies, and practices. The Agricultural Marketing Service (AMS) conducts a pesticide residue monitoring program.

This report includes farm use of 1998 crop year pesticide and fertilizers for selected vegetable crops in 16 major producing States.

Highlights

Snap Beans: New York growers applied herbicides to 94 percent of the fresh market acreage in 1998, compared to 69 percent in 1996. Insecticides were applied to 39 percent of all acres planted compared to 43 percent two years earlier. Fungicides were used on 35 percent of the total acreage planted compared with 45 percent in 1996. In 1998 nitrogen, phosphate and potash were applied to 71 percent to the acreage planted. In the seven states surveyed, herbicides were applied to 32 percent of the fresh market acreage, while 80 percent of the acreage received insecticide treatments. Fungicides were applied to 74 percent of the acreage.

In New York, the major herbicides used were metolachlor, applied to 54 percent of the acreage, followed by trifluralin, used on 50 percent of the acres. Bentazon followed far behind at 4 percent applied to the fresh market snap beans. Carbaryl was the most used insecticide, and it was applied to just 3 percent of the acreage planted.

Nearly all of the processing snap bean acreage in New York, 98 percent, was treated with herbicides. Forty percent of the acreage received insecticides. Fungicides were applied to 36 percent. All of acres planted received nitrogen, phosphate and potash. In the eight processing snap bean states, 92 percent of all acres were treated with herbicides, 80 percent were treated with insecticides and 46 percent were treated with fungicides.

Three primary herbicides were used in New York. Trifluralin and EPTC were most commonly used as they were applied to 93 percent of the acreage and 92 percent, respectively. The third most used chemical was metolachlor and it was applied to 83 percent of the processing snap beans. Bentazon was also used, on 62 percent of the acres and pendimethalin was applied to 11 percent of the acreage. The primary insecticide used was acephate and it was applied to 15 percent of the planted acreage in New York. Vinclozolin was the primary fungicide, used on 36 percent of the acreage.

In the major processing snap bean states, pesticides were put on 92 percent of the acres, 80 percent of the acreage received insecticides, and 46 percent received fungicides. The major herbicides applied were trifluralin applied to 56 percent of the acres, and both EPTC and metolachlor used on 53 percent of the acreage. Insecticides applied included acephate on 51 percent of the acreage, followed by dimethoate and methyl parathion at 24 and 22 percent coverage, respectively. Vinclozolin was the leading fungicide and was applied to 22 percent of the acreage.

Cabbage: New York, the second ranked fresh cabbage producing state, applied herbicides to 91 percent of the acreage planted, insecticides to 98 percent, and fungicides to 21 percent of the cabbage planted. In the nine major producing states, the percent of acres receiving herbicides, insecticides and fungicides were 72 percent, 96 percent and 43 percent, respectively.

The top used herbicide in New York was trifluralin which was applied on 89 percent of the cabbage. Metolachlor was a distant second, used on 12 percent. Oxyfluorfen and napropamide were also used in small quantities to 3 and 2 percent of the acres, respectively.

In the major states, herbicides were applied to 72 percent of the fresh market cabbage acres. The most commonly used herbicide was trifluralin at 42 percent followed by oxyfluralin which was applied to 13 percent of the acreage. Insecticides were applied to nearly all the acreage with 96 percent coverage reported. The most commonly used insecticides included: Bacillus thuringiensis on 69 percent of the acreage, lambda-cyhalothrin on 37 percent, and esfenvalerate on 29 percent. Fungicides were applied on 43 percent of the acreage. Chlorothalonil was most commonly used with 35 percent of the acres, maneb was utilized on 10 percent of the acreage.

Herbicides and insecticides were both widely utilized in the two states surveyed on cabbage for kraut. Overall, herbicides were applied to 95 percent of the total acreage with 90 percent being applied to New York acreage and all Wisconsin acres receiving herbicide treatments. Trifluralin was the most utilized herbicide as it was applied to 86 percent of the acres, Metolachlor was next, being applied to 54 percent and clomazone was applied to 39 percent of the treated acres. Insecticides were applied to nearly all the acreage in both New York and Wisconsin. Lambda-cyhalothrin was applied to 80 percent of the acreage in those two states followed by dimethoate which was applied to 36 percent, and permethrin on 21 percent. Fungicides were used more sparingly, being applied to only 17 percent of the acreage. Chlorothalonil was the main fungicide applied.

Carrots: Fresh market carrots were treated with herbicides on 83 percent of the acres planted, in New York. There were not enough reports to publish data on insecticides and fungicides on fresh market carrots and on processing acreage. Nitrogen, phosphate and potash fertilizers were applied to 87 percent of the New York acreage.

In the seven states surveyed, most of the carrot acreage for fresh market production was treated with herbicides. Herbicides were applied to 92 percent of the total surveyed acreage. The two herbicides used most were linuron on 90 percent of the acreage and trifluralin on 54 percent. Insecticides were used on 42 percent of the acreage. Diazinon, used the most, was applied to 17 percent of the crop while esfenvalerate

went on 14 percent of the acres. Fungicides were used on 64 percent of the acreage. Mefenoxam was the most utilized covering 36 percent of the acreage followed by sulfur with 19 percent coverage, chlorothalonil with 18 percent and iprodione on 16 percent.

Herbicides were also widely utilized on carrots for processing acreage. Not enough reports were available to publish New York data. In the six primary states, applications were reported on 88 percent of the surveyed acreage. Linuron was the predominant choice covering 86 percent of the acreage followed by fluazifop-P-butyl on 24 percent, and trifluralin on 21 percent. Insecticides were applied to 45 percent of the acres. Esfenvalerate was used most being applied to 31 percent of the acres. Fungicides were applied to 60 percent of the acreage. Chlorothalonil was the most utilized covering 43 percent of the acreage followed by copper hydroxide on 9 percent.

Cauliflower: New York growers applied herbicides to 56 percent of the crop, insecticides to 82 percent and fungicides to 61 percent. Nitrogen, phosphate and potash were applied to 99 percent of the acreage.

The most widely used herbicides were oxyfluorfen on 34 percent of the acres, and DCPA on 22 percent. A wide array of insecticides was utilized including: chlorpyrifos on 61 percent of the acreage, oxydemeton-methyl on 56 percent, imidacloprid on 53 percent, and esfenvalerate with 41 percent of the acres covered. Fungicides were used less, applied to 21 percent of the acreage. Chlorothalonil and maneb were applied to 9 and 6 percent of the acres, respectively.

Sweet Corn: New York sweet corn growers applied herbicides to 95 percent of the fresh market sweet corn acreage. Only growers in Oregon applied herbicides to more fresh market acreage. Atrazine was most often used in New York since it was applied to 85 percent of the acres. Metolachlor followed and was used on 71 percent of the sweet corn. Alachlor was a distant third, being applied to 16 percent of the acreage. In the twelve states surveyed, 81 percent of the fresh market acreage was treated with herbicides. Atrazine was the most common chemical and was put on 57 percent of all the sweet corn acreage.

Insecticides were widely used also, being applied to 85 percent of the New York acreage. The most commonly applied were lambda-cyhalothrin on 60 percent and thiodicarb on 51 percent. Those two were followed by permethrin on 15 percent of the sweet corn and methomyl on 13 percent of the acres. In the twelve surveyed states, insecticides were put on an average of 86 percent of the land with methomyl most used on 48 percent of the area.

In New York, 82 percent of the processing sweet corn acreage received herbicides, 81 percent were treated with insecticides and 17 percent of the acres had fungicides applied. Those numbers compare

with 94 percent of the processing sweet corn acreage receiving herbicides in the six major producing states, 74 percent of the area treated with insecticides and 10 percent receiving fungicides.

Atrazine was the leading herbicide used in New York, applied to 69 percent of the sweet corn. Metolachlor was second on 52 percent of the area. Lambda-cyhalothrin was the predominant insecticide. It was applied to 68 percent of the acreage with tefluthrin coming in second on 11 percent of the acres followed by cyfluthrin on 10 percent of the acres. The single most used fungicide was propiconazole, and it was applied to 17 percent of the sweet corn.

Cucumbers: Fresh market cucumbers in New York received nitrogen, phosphate and potash on 98 percent of the 3,800 acres. Herbicides were applied to 73 percent of the crop. Insecticides were put on 28 percent of the planted area. Carbaryl was the most used and insecticide applied to 5 percent of the acreage. Chlorothalonil was the most often applied fungicide; put on 15 percent of the cucumbers.

Lettuce, Head: New York lettuce growers applied insecticides to 97 percent of the crop. That level compares with 95 percent of the area in the four states surveyed being treated with insecticides. There was an insufficient number of reports to provide data on herbicide and fungicide applications.

Onions, Dry: New York onion growers applied herbicides to 97 percent of the acreage compared to 91 percent in 1996. Insecticides were applied to 99 percent, fungicide to 99 percent and other chemicals to 28 percent of the planted area. A total of 291,000 pounds of total pesticides were applied to New York's 13,100 onion acres.

Pendimethalin was the herbicide of choice on 97 percent of the onion acres. Oxyfluorfen was next on 53 percent of the land and fluazifop-P-butyl followed on 47 percent of the acreage. Three insecticides were closely used. Lambda-cyhalothrin was most used on 51 percent of the onions planted with chlorpyrifos and permethrin sharing second with usage on 49 percent of the crop. The major fungicide of choice was chlorothalonil, applied to 78 percent of the acreage. Mancozeb was next on 56 percent and iprodione on 44 percent of the crop. Under Other Chemicals, maleic hydrazide a growth regulator was used on 26 percent of the onion acreage.

Green Peas, Processing: New York growers applied herbicides to 95 percent of the processing green pea planted acreage. This is up 8 percent from 1996. There were 18,300 pounds of herbicides applied in 1998, 5,100 pounds more than in 1996.

Across the five states surveyed herbicides were applied to 94 percent of the planted acreage of processing green peas. The application percentages ranged from 92 percent in Minnesota to 98 percent in Washington. Imazethapyr received the most coverage, on 32 percent of the crop. Trifluralin, at 31 percent coverage, and pendimethalin, at 28 percent, were the next two most used herbicides. Insecticides were applied to 38 percent of the acreage. Dimethoate was applied to 22 percent and esfenvalerate was applied to 20 percent of the green pea acreage. Fungicide use was minimal.

Strawberries: New York growers applied herbicides to 74 percent of the 1,700 acres of strawberries in 1998. Insecticides were applied to 71 percent of the acreage and fungicides to 55 percent. New York growers applied fungicides to the lowest percentage of planted acres than all other states surveyed. Florida applied at least one fungicide to all of its acres.

In the 9 states surveyed, herbicides were used to treat 35 percent of the strawberry acres. Napropamide and paraquat were each used to treat 14 percent of the acreage. Insecticides and fungicides were more common forms of pesticides applied to strawberries. Eighty-nine percent of the acreage was treated to control insects; abamectin was used on 47 percent. Fungicides were used on 91 percent of the strawberry acreage. Captan was the most common fungicide, being used on 75 percent of the acres. Other common fungicides: benomyl, iprodione, myclobutanil, sulfur, thiram, and vinclozolin. Other types of chemicals were applied to 63 percent of all planted strawberry acres. Half of this acreage was treated with methyl bromide while 37 percent was treated with chloropicrin.

Tomatoes: Fresh market tomatoes were treated with herbicides on 37 percent of the acres planted in New York. New York growers applied insecticides on 49 percent of the acreage and fungicides on 70 percent of the tomato acreage. These percentages are considerably lower than the percentages that comprise the national acreage. Herbicides were applied to 57 percent of the fresh market tomato acreage. Metribuzin was applied to 24 percent of the acreage, and paraquat was applied to 23 percent. Insecticides were applied to 92 percent of the acreage with *Bacillus thuringiensis* used the most, on 52 percent. Esfenvalerate and permethrin were the next most common insecticides, being used to treat 39 and 37 percent, respectively. Fungicides were applied to 94 percent of the acreage. Copper hydroxide was the most common fungicide, being applied to 60 percent of the total acres. Mancozeb and chlorothalonil usage followed at 52 and 47 percent, respectively. For the other chemical class, nearly half of the total acres were treated. Methyl bromide was used most often, 47 percent of total acreage, mainly in Florida, Georgia and North Carolina.