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CITRUS

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FLORIDA AGRICULTURE

COMMERCIAL CITRUS TREE INVENTORY PRELIMINARY REPORT

September 6, 1984

COMMERCIAL CITRUS DOWN TO 761,365 ACRES

The 1984 census of commercial citrus in Florida totals 761,365 acres of all citrus, compared with the 847,856 acres counted in the 1982 census. This is a net decrease of 86,491 acres, primarily due to the December 1983 freeze. The gross loss during the two-year period since the last census was actually 159,719 acres which was offset substantially by the 73,288 acres of new plantings.

ORANGE ACREAGE DOWN SIGNIFICANTLY

The total acreage of all oranges in the 1984 survey is 573,991, a decrease of 10 percent from the 636,864 reported in the 1982 census. There were 61,619 acres set in 1982 and 1983 and 124,492 acres lost since 1982 with the resulting net decrease of 62,873 acres.

The 1984 survey shows the total bearing acreage of all oranges to be 474,269 compared to 560,203 in 1982 which is down over 15 percent or 85,934 acres since the 1982 census.

GRAPEFRUIT ACREAGE LOWER

The acreage of all grapefruit is lower by 5,259 acres. The 1984 census shows 134,680 total acres compared to 139,939 acres in 1982. However, the bearing acreage is lower by 8,196. New plantings increased sharply, totaling 10,141 acres for 1982 and 1983 as compared to only 5,404 for 1980 and 1981 as was reported in the 1982 census. Total acreage for Duncan (seedy) grapefruit continues to decline, down by 4,096 acres or a little more than 21 percent during the last two years. The record indicates that very few acres of the seeded grapefruit are being planted.

FLORIDA COMMERCIAL CITRUS ACREAGE

Census years	Oranges	Grapefruit	Specialty fruit	Total
1966	673,086	103,224	81,772	858,082
1968	713,400	119,883	97,966	931,249
1970	715,806	124,050	101,615	941,471
1972	659,418	124,142	94,459	878,019
1974	642,431	130,326	91,341	864,098
1976	628,567	137,909	85,893	852,369
1978	616,020	136,342	78,873	831,235
1980	627,174	139,944	78,165	845,283
1982	636,864	139,939	71,053	847,856
1984	573,991	134,680	52,694	761,365

SPECIALTY CITRUS MUCH LOWER

The acreages of Temples, tangerines and tangelo are all considerably lower in 1984 than 1982. Dancy and Robinson tangerines combined dropped 5,327 acres or almost 40 percent since the 1982 survey. Temple acreage at 13,826 is

down 3,276 or slightly more than 19 percent. The all tangelo acreage decreased more than 23 percent from 16,509 acres in 1982, to 12,676 in 1984.

FLORIDA COMMERCIAL CITRUS ACREAGE: CHANGES BETWEEN CENSUSES

Census years	Two year change		Net change	Total
	Gross loss	New plantings		
1966	(First census via aerial photography)			858,082
1968	13,910	87,077	+73,167	931,249
1970	26,114	36,336	+10,222	941,471
1972 1/	82,948	19,496	-63,452	878,019
1974	40,181	26,260	-13,921	864,098
1976	40,518	28,789	-11,729	852,369
1978 1/	49,371	28,237	-21,134	831,235
1980	25,925	39,973	+14,048	845,283
1982 1/	51,942	54,515	+2,573	847,856
1984 2/	159,719	73,228	-86,491	761,365

1/ January freezes in 1971, 1977, 1981 and 1982.

2/ December freeze in 1983.

LOWER INTERIOR AND EAST COAST

The Lower Interior and East Coast counties showed increases in total acreages, and these increases would have been somewhat greater, had there not been some continued losses from the severe freeze which hit these areas in January 1981 and 1982. This report reflects growers efforts to push and replace trees damaged from that freeze. The Lower Interior had 313,672 total acres in 1982 as compared to 325,904 in 1984. The East Coast counties showed a slight increase from 220,631 acres in 1982 to 224,203 acres in 1984. St. Lucie County had the most significant increase on the East Coast, going from 76,863 acres in 1982 to 80,402 in 1984. Highlands County in the Lower Interior gained 6,369 net acres from 37,661 in 1982 to 44,030 acres in 1984. Hendry County, also in the lower part of the State, showed a net gain of 3,863 acres, from 32,944 in 1982 to 36,807 acres in 1984. Polk, the largest citrus producing county in the United States with 129,912 acres, decreased 3,633 in total acres from 1982 to 1984, partly from losses due to the 1981 and 1982 freezes that damaged various portions of this county.

UPPER INTERIOR AND WEST COAST AREAS

This census and sample survey shows a large decrease in total citrus acreage for both the Upper Interior and West Coast citrus areas. The Upper Interior reflects a net loss of 34.4 percent. In the West Coast area, the net loss was 28.6 percent. In the Upper Interior, Osceola was the only county considered green enough to work the regular tree census by photo interpretation. All other counties in the Upper Interior were worked by probability sampling. In the West Coast district,

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ALL FLORIDA CITRUS: 1984 INVENTORY OF COMMERCIAL ACREAGE BY VARIETY AND YEAR SET.

YEAR SET	ALL CITRUS	ORANGES				SEEDLESS GRAPEFRUIT:		
		EARLY	MIDSEASON	LATE	UNIDENT.	TOTAL	WHITE	PINK
ACRES								
PRE-1940	116563	20228	19511	48179	12	87930	11706	2038
1940-49	56611	11541	6696	24320	1	42558	2233	7126
1950-59	89790	17648	12806	44531	3	74988	2792	5703
1960	26667	8187	5012	10171	0	23370	1265	219
1961	21884	6637	3456	9316	0	19409	1334	51
1962	28561	9572	4941	10893	1	25407	822	186
1963	27060	7879	5629	9245	0	22753	1628	124
1964	33520	9747	5806	11334	0	26887	2879	402
1965	46257	12401	6518	12142	7	31068	7100	1921
1966	30109	6630	4589	7110	0	18329	6566	1685
1967	24376	3898	3002	6140	4	13044	5940	1793
1968	12075	1682	1371	3008	3	6064	2367	1456
1969	11726	2368	1169	4140	1	7678	1336	1143
1970	8618	1891	1309	2586	5	5791	1046	695
1971	6946	768	961	1634	1	3364	1911	1103
1972	12063	2241	1487	4634	3	8365	1345	1590
1973	10640	1372	965	1887	16	4240	2289	3171
1974	12241	2056	1533	2838	21	6448	2298	2681
1975	12607	2288	1746	4035	73	8142	1550	1973
1976	10955	2632	1128	3985	37	7782	580	1521
1977	12505	3134	1000	4003	233	8370	510	2426
1978	12617	3180	1225	3914	419	6738	460	2402
1979	18491	4655	1546	5663	1680	13544	469	2012
TOTAL BEARING	642882	142635	93406	235708	2520	474269	60426	43421
1980	17112	3772	963	4164	4886	13785	353	956
1981	28143	5809	1583	3769	13157	24318	177	1065
1982	27151	8073	831	4568	9254	22726	520	1089
1983	46077	6507	1059	6401	22926	38893	537	2275
NON-BEARING	118483	26161	4436	18902	50223	99722	1587	5385
TOTAL	761365	168796	97842	254610	52743	573991	62013	48806

ALL FLORIDA CITRUS: 1984 INVENTORY OF COMMERCIAL ACREAGE BY VARIETY AND YEAR SET.

YEAR	GRAPEFRUIT			ACID			OTHER	
SET	SEEDY	UNIDENT.	TOTAL	TEMPLES	TANGELOS	TANGERINE	FRUIT	CITRUS
ACRES								
PRE-1940	11069	0	24813	1201	129	2290	34	166
1940-49	760	0	10119	3152	433	238	33	78
1950-59	243	4	8742	2650	1491	446	441	1032
1960	125	0	1609	410	456	173	62	587
1961	64	0	1449	148	407	61	54	356
1962	99	0	1107	353	592	188	271	643
1963	55	0	1807	483	849	357	176	635
1964	51	1	3333	852	1142	352	369	585
1965	238	0	9259	1734	2221	714	298	963
1966	157	0	8408	858	1112	410	322	670
1967	504	0	8237	578	1270	496	352	399
1968	186	0	4009	177	609	239	675	302
1969	183	0	2662	147	458	377	253	151
1970	177	1	1919	156	313	293	84	62
1971	168	0	3122	32	76	207	91	54
1972	201	0	3136	106	144	167	62	83
1973	177	0	5637	75	94	152	394	48
1974	179	0	5158	78	30	52	407	68
1975	223	0	3746	59	96	65	342	157
1976	154	5	2260	47	98	107	476	185
1977	163	41	3140	28	74	63	771	59
1978	77	25	2964	74	94	41	655	51
1979	70	443	2994	66	83	101	1237	466
TOTAL BEARING	15263	520	119630	13464	12271	7589	7859	7800
1980	42	593	1944	57	54	73	1030	169
1981	12	1711	2965	84	226	209	196	145
1982	9	2339	3957	27	26	87	107	221
1983	1	3371	6184	194	99	159	113	435
NON-BEARING	64	8014	15050	362	405	528	1446	970
TOTAL	15327	8534	134680	13826	12676	8117	9305	8770

ALL FLORIDA CITRUS: 84 INVENTORY OF COMMERCIAL TREES BY VARIETY AND YEAR SET.

YEAR SET	ALL CITRUS	O R A N G E S				:SEEDLESS GRAPEFRUIT:		
		EARLY	MIDSEASON:	LATE	UNIDENT.:	TOTAL	WHITE	PINK
1,000 TREES								
PRE-1940	8073.7	1470.2	1394.5	3334.0	1.6	6200.3	758.3	137.3
1940-49	3994.2	825.1	494.1	1719.3	0.0	3038.5	151.2	454.1
1950-59	6737.3	1311.1	983.1	3366.8	0.3	5661.3	185.6	370.1
1960	2184.3	630.0	424.4	866.4	0.0	1920.8	84.7	16.7
1961	1864.5	542.6	290.2	777.9	0.0	1610.7	87.4	4.7
1962	2381.2	771.2	407.9	916.7	0.1	2095.9	56.0	12.3
1963	2283.9	647.6	475.5	791.1	0.0	1914.2	111.9	10.0
1964	3050.8	869.0	532.6	1056.0	0.0	2457.6	221.3	31.5
1965	4298.5	1106.2	659.7	1166.2	0.6	2932.7	580.3	156.0
1966	2941.0	652.2	472.0	728.2	0.0	1852.4	566.0	139.3
1967	2426.6	408.8	316.1	646.8	0.2	1371.9	495.7	158.8
1968	1224.5	174.2	148.5	307.9	0.2	630.8	197.1	117.8
1969	1200.6	247.4	125.0	424.1	0.0	796.5	115.6	100.6
1970	872.1	208.3	134.9	265.9	0.4	609.5	85.8	60.4
1971	654.2	73.1	102.8	160.9	0.1	336.9	152.6	96.8
1972	1292.5	250.0	166.8	533.2	0.2	950.2	117.1	144.0
1973	977.6	124.7	94.6	170.6	1.7	391.6	199.2	276.6
1974	1199.5	194.9	154.5	277.8	2.0	629.2	203.0	261.0
1975	1169.5	210.1	165.8	377.7	7.4	761.0	124.7	177.5
1976	1008.0	233.6	103.5	362.9	2.8	702.8	43.6	135.3
1977	1189.4	291.2	93.2	355.6	19.3	759.3	42.3	227.6
1978	1190.7	306.3	120.9	360.8	33.6	821.6	37.9	206.7
1979	1860.8	445.3	159.9	577.6	149.2	1332.0	39.6	187.0
TOTAL BEARING	54015.4	11993.1	8020.5	19544.4	219.7	39777.7	4656.9	3482.1
1980	1755.5	372.8	94.5	411.2	488.6	1367.1	27.7	96.5
1981	2849.9	610.1	166.3	385.8	1315.1	2477.3	16.0	107.5
1982	2698.2	832.2	100.0	484.2	880.9	2297.3	44.7	102.6
1983	4656.5	963.2	118.9	694.5	2188.7	3965.3	55.3	213.8
NON-BEARING	11960.1	2778.3	479.7	1975.7	4873.3	10107.0	143.7	520.4
TOTAL	65975.5	14771.4	8500.2	21520.1	5093.0	49884.7	4800.6	4002.5

ALL FLORIDA CITRUS: 1984 INVENTORY OF COMMERCIAL TREES BY VARIETY AND YEAR SET.

YEAR	G R A P E F R U I T			T A N G E L O S			ACID	OTHER
SET	SEEDY	UNIDENT.	TOTAL	TEMPLES	TANGELOS	TANGERINE	FRUIT	CITRUS
	1,000 TREES							
PRE-1940	697.9	0.0	1593.5	89.5	10.2	163.6	3.3	13.3
1940-49	51.3	0.0	656.6	240.0	31.1	17.2	4.1	6.7
1950-59	17.2	0.3	573.2	204.2	110.6	32.3	60.1	95.6
1960	7.9	0.0	109.3	33.3	37.5	14.2	10.4	58.8
1961	5.7	0.0	97.8	12.7	31.1	5.4	8.7	38.1
1962	7.4	0.0	75.7	32.6	50.9	16.7	40.5	68.9
1963	3.8	0.0	125.7	43.8	74.0	31.9	31.9	62.4
1964	3.7	0.0	256.5	80.4	101.3	31.5	59.0	64.5
1965	18.8	0.0	755.1	183.6	210.8	67.9	45.8	102.6
1966	11.2	0.0	716.5	90.7	118.1	41.7	48.1	73.5
1967	43.4	0.0	697.9	64.6	135.6	62.7	48.5	45.4
1968	14.3	0.0	329.2	19.0	61.2	26.3	122.8	35.2
1969	14.6	0.0	230.8	14.6	51.2	46.6	42.4	18.5
1970	12.1	0.1	158.4	14.8	35.8	33.1	13.7	6.8
1971	7.6	0.0	257.0	3.3	9.3	25.3	17.2	5.2
1972	15.6	0.0	276.7	9.4	17.1	19.8	9.1	10.2
1973	12.8	0.0	488.6	8.5	9.5	17.3	55.8	6.3
1974	14.1	0.0	478.1	7.4	3.3	5.7	66.1	9.7
1975	16.3	0.0	318.5	5.3	9.7	5.9	50.6	18.5
1976	13.4	0.3	192.6	3.4	9.0	10.6	63.8	25.8
1977	12.5	2.9	285.3	1.9	8.5	6.2	122.4	5.8
1978	5.4	1.7	251.7	6.9	9.9	3.8	91.3	5.5
1979	4.9	36.6	268.1	5.6	7.8	10.5	191.7	45.1
TOTAL BEARING	1011.9	41.9	9192.8	1175.5	1143.5	696.2	1207.3	822.4
1980	2.8	57.6	184.6	5.4	4.3	8.6	161.7	23.8
1981	0.6	150.1	274.2	7.8	25.1	24.2	26.2	15.1
1982	0.5	209.9	357.7	3.0	2.6	8.1	17.2	12.3
1983	0.0	304.5	573.6	23.4	11.4	17.2	19.0	46.6
NON-BEARING	3.9	722.1	1390.1	39.6	43.4	58.1	224.1	97.8
TOTAL	1015.8	764.0	10582.9	1215.1	1186.9	754.3	1431.4	920.2

ALL FLORIDA CITRUS: Acreage and tree numbers in commercial groves by county, 1978 to 1984

Area and County	Acres in commercial groves				Trees in commercial groves			
	1978	1980	1982	1984	1978	1980	1982	1984
	Acres				1,000 trees			
East Coast:								
Brevard	17,039	17,006	15,827	15,804	1,643.3	1,612.7	1,519.9	1,509.3
Broward	3,199	2,147	1,770	1,646	238.6	160.3	124.5	124.8
Dade	4,587	6,142	7,158	6,976	754.1	990.6	1,134.0	1,120.3
Indian River	56,200	58,262	62,703	63,510	4,701.7	4,916.1	5,451.2	5,507.7
Martin	38,361	40,768	40,646	40,483	3,707.7	3,940.0	3,977.9	4,077.7
Palm Beach	16,343	16,797	15,664	15,382	1,727.4	1,765.8	1,648.7	1,575.6
St. Lucie	70,462	75,140	76,863	80,402	6,121.0	6,534.8	6,728.9	7,110.0
Area total	206,191	216,262	220,631	224,203	18,893.8	19,920.3	20,585.1	21,025.4
Lower Interior:								
Charlotte	6,100	6,122	6,120	8,220	595.6	590.0	580.8	783.6
Collier	5,975	6,706	7,931	8,425	649.8	718.0	847.2	896.3
DeSoto	33,882	36,157	34,212	34,786	3,476.1	3,722.3	3,463.0	3,589.9
Glades	1,613	3,395	4,026	5,141	152.8	304.2	358.2	463.6
Hardee	44,084	45,161	43,568	43,954	3,387.0	3,530.4	3,477.2	3,687.0
Hendry	28,903	30,086	32,944	36,807	3,214.1	3,340.2	3,672.0	4,101.1
Highlands	37,105	37,767	37,661	44,030	2,982.0	3,063.1	3,131.1	3,906.6
Lee	5,384	5,451	6,711	6,575	584.9	595.4	729.1	700.9
Okeechobee	4,171	4,281	6,954	8,044	370.0	379.9	640.9	754.9
Polk	134,261	132,124	133,545	129,912	9,567.1	9,439.1	9,663.3	9,591.1
Area total	301,478	307,250	313,672	325,904	24,979.4	25,682.6	26,562.8	28,475.0
Upper Interior:								
Alachua	109	109	101	*	8.8	8.9	8.5	*
Flagler	192	177	179	*	16.0	14.1	14.4	*
Lake	123,246	122,777	117,730	*	9,570.5	9,473.0	9,026.3	*
Marion	11,272	11,484	11,396	*	887.3	905.1	888.4	*
Orange	51,174	50,673	48,547	*	3,872.0	3,830.3	3,678.1	*
Osceola	16,231	16,457	17,959	16,133	1,201.3	1,218.3	1,405.3	1,266.9
Putnam	2,692	2,631	2,464	*	223.3	218.0	203.0	*
St. Johns	125	112	110	*	10.7	9.3	9.1	*
Seminole	7,635	7,202	6,823	*	584.6	548.1	522.3	*
Sumter	1,760	1,772	1,593	*	145.7	146.7	134.0	*
Volusia	10,227	10,143	9,810	*	791.0	783.8	749.5	*
Area total	224,663	223,537	216,712	142,105	17,311.2	17,155.6	16,638.9	10,900.9
West Coast:								
Citrus	1,280	1,260	1,256	*	88.8	87.2	85.8	*
Hernando	6,554	6,765	6,471	*	528.6	549.3	520.6	*
Hillsborough	38,163	37,976	37,631	*	3,141.0	3,140.1	3,118.9	*
Manatee	14,730	14,802	14,071	14,360	1,201.8	1,197.1	1,151.1	1,201.0
Pasco	33,367	33,314	33,425	*	2,583.1	2,567.7	2,566.6	*
Pinellas	3,205	2,579	2,417	1,674	262.8	211.3	196.7	133.0
Sarasota	1,604	1,538	1,570	1,619	146.3	141.2	143.4	145.5
Area total	98,903	98,234	96,841	69,163	7,952.4	7,893.9	7,783.1	5,574.2
State Total	831,235	845,283	847,856	761,365	69,136.8	70,652.4	71,569.9	65,975.5

*Sample survey data inadequate for reliable county estimates.

ALL FLORIDA CITRUS: Acreage and tree numbers in commercial
groves by variety, 1978 to 1984

Fruit types	Acres in commercial groves				Trees in commercial groves			
	1978	1980	1982	1984	1978	1980	1982	1984
	Acres				1,000 trees			
ORANGES								
Hamlin	133,118	138,188	141,622	129,928	11,176.3	11,609.8	12,050.8	11,549.3
Navel	10,826	11,487	12,603	12,584	920.6	984.9	1,095.2	1,149.0
Other Early	34,202	33,861	32,936	26,284	2,607.2	2,581.4	2,518.2	2,073.1
Pineapple	112,355	111,215	105,467	86,616	9,622.5	9,542.4	9,118.7	7,708.2
Other Mids.	17,075	16,156	15,072	11,226	1,208.6	1,139.3	1,065.4	792.0
Valencia	288,389	287,884	283,782	254,610	23,620.6	23,584.6	23,393.8	21,520.1
Unidentified	20,055	28,383	45,382	52,743	1,687.4	2,535.4	4,262.3	5,093.0
Sub-total	616,020	627,174	636,864	573,991	50,843.2	51,977.8	53,504.4	49,884.7
GRAPEFRUIT								
Seedy	21,495	20,321	19,423	15,327	1,439.6	1,363.4	1,299.5	1,015.8
White Seedless	68,119	67,973	66,682	62,013	5,268.9	5,261.6	5,158.2	4,800.6
Pink Seedless	39,961	44,163	46,608	48,806	3,116.9	3,488.4	3,736.2	4,002.5
Unidentified	6,767	7,487	7,226	8,534	587.1	655.3	639.3	764.0
Sub-total	136,342	139,944	139,939	134,680	10,412.5	10,768.7	10,833.2	10,582.9
SPECIALTY								
Temples	19,129	18,470	17,102	13,826	1,645.5	1,585.1	1,469.6	1,215.1
Tangelos	18,149	17,643	16,509	12,676	1,713.3	1,649.5	1,530.1	1,186.9
Dancy Tang.	11,287	10,126	8,690	4,957	861.2	772.7	666.8	386.3
Robinson Tang.	5,622	5,552	4,754	3,160	662.6	650.2	548.7	368.0
Honey Tang.	8,536	8,569	8,108	6,215	902.4	900.0	853.4	663.0
Limes	4,807	6,539	7,491	7,009	790.9	1,059.3	1,194.2	1,118.2
True Lemons	4,420	4,141	2,106	1,808	530.2	483.1	267.9	235.7
Meyer Lemons	1,427	1,355	1,194	488	241.2	230.9	201.4	77.5
Miscellaneous	5,496	5,770	5,099	2,555	533.8	575.1	500.2	257.2
Sub-total	78,873	78,165	71,053	52,694	7,881.1	7,905.9	7,232.3	5,507.9
TOTAL CITRUS	831,235	845,283	847,856	761,365	69,136.8	70,652.4	71,569.9	65,975.5

Manatee, Pinellas and Sarasota counties were virtually untouched by the December 1983 freeze and were worked by the regular tree census methods.

CITRUS CENSUS PROCEDURES

This biennial census, the tenth in a series which began with January 1966, is worked as previously, around current aerial photographic coverage. Aerial photos of the 14,000 square miles covering virtually all of Florida's citrus were taken starting the first of November 1983. When the freeze hit in late December, about 70 percent of the citrus acreage had been photographed with the balance of the aerials taken during the winter and spring. Again this winter, the hard freeze occurred too late to provide adequate time for the tree damage to be registered by the usual photography and field survey procedures. As a result of this, in the Upper Interior and upper West Coast districts it was necessary to follow a probability sampling and estimating procedure, to produce a census result this year.

The usual census procedure followed in the Lower Interior and East Coast districts, relies on a complete mapping, and indexing of all citrus plantings onto scaled photo enlargements from the previous census. The current aerial photos are interpreted by stereoscopic comparison with photos from the previous census to detect changes and tree removals and new tree plantings. Each change observed by the photo interpreters is followed by a visit to the grove and usually results in a new tree count. Grove visits are accomplished by experienced field personnel in four wheel drive vehicles. Block acreages are measured from photo enlargements with a polar planimeter. Tree numbers used for most blocks are actual tree counts. Blocks are reduced as necessary for counts made of excessive dead trees or empty spaces, as well as barnyards, turn rows, swale ditches and irrigation ponds.

A record for each separate planting or block is maintained in the data system. A new record is created for each new planting, and records for plantings no longer existing are removed. In most previous censuses over two thirds of these plantings were unchanged from the census two years earlier, and these records were brought forward and entered into the current census tabulations. Thus, usually fewer than one third of the plantings or blocks have required in grove visits.

Much of the credit for success of this field work goes to the Division of Plant Industry, which supplied nine trained citrus technologists with four wheel drive vehicles.

SAMPLE SURVEY OF THE UPPER INTERIOR AND UPPER WEST COAST

Tree damage and loss in the Upper Interior and upper West Coast areas was so widespread and severe that a census of all groves which have changed since the 1982 census could not possibly be completed in time for a 1984 report of citrus acreage. Furthermore, the status of most trees still living will not be finally known in 1984. As of the census survey period, it is possible, in these severely damaged areas, only to tell if a tree is alive. In order to update tree acreage and numbers for these areas as of June, a probability sample of about 6,800 citrus plantings was selected. This is a little over 10 percent of all the individual citrus age variety plantings standing in the sampled areas in the 1982 citrus census. Each planting selected represents an individual planting of one variety and age. Each such unit included in the sample was checked on the ground and a determination made on the percent of trees still living. Any tree with green foliage in the limb scaffold was considered alive unless the planting could be considered totally abandoned for lack of care.

Upper Interior area counties included in this sample survey were Alachua, Flagler, Lake, Marion, Orange, Putnam, St. Johns, Seminole, Sumter and Volusia. West Coast area counties sampled were Citrus, Hernando, Hillsborough and Pasco.

Estimates resulting from the sample are the numbers of acres and trees living which were also present in the previous 1982 census. Thus it was also necessary to project the number of acres and trees planted in 1982 and 1983 still standing in June 1984. These projections utilized actual plantings in the Lower Interior and East Coast areas which in recent censuses have comprised over 80 percent of Florida citrus plantings. Thus a total of 1982 and 1983 plantings was imputed for the sampled areas, then reduced at the same loss rates as found for 1981 and older plantings in the sampled areas.

The sample of 1981 and older block plantings is stratified according to variety and age, to eliminate sampling variability due to differences between these strata. The temporal status of trees in the sampled areas, is a more important criterion for accuracy of the estimates than is the sampling variability. The sample results will not produce reliable county data and will be used only for estimating district totals of all citrus in this report, and district totals by type, variety and year planted to be published by December in the Commercial Citrus Inventory - 1984.

The sample estimator and its approximate variance for each variety-age stratum are:

$$\hat{Y} = R \sum X_i$$

$$V(\hat{Y}) \approx \frac{N-n}{n} N [S_Y^2 + R^2 S_X^2 - 2RS_{XY}]$$

$$R = \frac{\sum Y_i}{\sum X_i} : \text{ratio for stratum, where } Y_i = R_i X_i$$

n : Number of sample plantings in stratum

N : Number of population plantings in stratum

Y : Estimated acres or trees in one age-variety class or stratum

R_i : Live trees 1984 as percent of trees 1982 in *i*th sample planting

X_i : Trees 1982 in *i*th sample planting

Y_i : Trees 1984 in *i*th sample planting

S_Y² : Variance of Y

S_X² : Variance of X

S_{XY} : Covariance of X and Y

The estimates and variances at the district level are the sum of Y and V(Y) over each of the variety strata.

The statistical errors resulting from the sampling procedure are shown below as a percent of the combined estimates made for the sampled districts and for the State:

	Combination of Estimate and Census	Relative Error Due to Sampling
	1,000 trees	Percent
Upper Interior	10,901	1.4
West Coast	5,574	1.6
State Total	65,976	0.3