

plane, and possibly also by ground equipment, over infested areas. The number of sterile flies needed would depend upon the wild population and the size of the area to be covered, and would probably be done during the winter when the wild fly population is low. The number released would have to be many times that of the wild fly population. These fruit flies mate several times, unlike the screwworm fly which characteristically mates only once.

During the past several months, USDA entomologists at the Orlando station under Mr. Allen Selhime have screened over 50 chemical compounds in Dade County in the search for a highly effective lure. Work is being done at the University of Florida Subtropical Experiment Station at Homestead under the direction of Dr. R. M. Baranowski on control measures which can be applied on a local basis, if it is necessary for the people in Florida to "learn to live" with the Caribbean fruit fly. Tests are in progress in a five acre guava grove near Homestead made available by Mr. Harold Kendall of Goulds, who donated all of the fruit and the use of the grove to this project. A study of the bionomics, biology, and ecology of the fly is being set up in south Florida under the direction of Dr. Baranowski with the aid of a \$30,000 grant made through a cooperative agreement with the Entomological Research Division, Agricultural Research Service, USDA. The Division of Plant Industry of the Florida Department of Agriculture will continue to assist in these and other studies of the fly.

CONCLUDING REMARKS

At the present time the Caribbean fruit fly

has not been declared a serious economic pest detrimental to major commercial crops in Florida. However, there is no question but that this fly has proven to be a serious nuisance to the residents of the southeastern part of Florida. Dooryard plantings of tropical and subtropical fruits along the "Gold Coast" have suffered severely from the ravages of Caribbean fruit fly larvae. The key to any eradication program is a reliable survey to pinpoint the exact location of the fly, and that requires a highly effective lure. At the present time we do not have such a lure. An accurate survey would be required before any estimate of the infested acreage could be made. Any eradication attempt without a positive detection device would cost untold millions of dollars, because every acre of south and central Florida would have to be sprayed several times. Current research efforts by USDA scientists in Florida are centered on the search for a highly effective lure.

Once a positive lure is found, monetary justification would also be required before any program could be initiated. We would have to ask ourselves if the crops saved are worth the cost of the program. Even with a positive lure, it would be difficult to place an accurate monetary price tag on an eradication. Meanwhile, research by state and federal scientists continues to try to find the answers which would be needed if eventually a decision is made that the Caribbean fruit fly should be eradicated in Florida.

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THE PEACH IN NORTH FLORIDA

H. W. YOUNG AND H. H. BRYAN¹

The history of commercial peach production in the North Florida area began with a planting near Barney, Georgia, in 1950. The selection was developed at the USDA Peach Laboratory

at Ft. Valley, Georgia, and later named Maygold. The planting was quite successful and the fruit matured before other varieties in Georgia were ready for the market.

Research began in 1951 when variety tests were planted at Quincy, Jay, Live Oak, and Monticello, Florida. Results of these tests were reported by Sharpe^(1, 2) in 1954 and 1961, and by Young⁽³⁾ in 1962. Sharpe⁽¹⁾ also discussed

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TABLE 1. PEACH ACREAGE IN NORTH FLORIDA 1966.

County	Total Acreage	<u>Acres of each variety</u>			
		Maygold	Junegold	Suwannee	Others
Madison	1860	565	486	455	354
Jefferson	950	796	10	100	44
Holmes	450	400	0	25	25
Gadsden	245	120	0	0	125
Leon	110	66	9	35	0
Hamilton	70	0	70	0	0
Jackson	65	20	0	25	20
Bay	57	18	3	21	15
Santa Rosa	50	10	0	0	40
Walton	30	30	0	0	0
Calhoun	19	13	0	3	3
Escambia	12	7	0	0	5
Columbia	10	0	0	0	10
Lafayette	10	0	0	0	10
Okaloosa	10	6	0	1	3
Washington	10	9	0	0	1
	3958	2060	578	665	655
(Percent of total)	(100%)	(52%)	(14%)	(17%)	(17%)

the commercial potential of peaches in North-west Florida. A tobacco company in Gadsden County planted 150 acres of Maygold in 1957. With this modest beginning, peach production in North Florida was initiated.

A survey, made in cooperation with County

Agents in 1966, indicated 3958 acres of peaches in North Florida (Table 1). Some peaches were found in sixteen counties, but the bulk of the acreage was in Madison, Jefferson, Holmes and Gadsden Counties. Over half of the acreage was in the Maygold variety with small acreages

TABLE 2. HOURS OF TEMPERATURE AT OR BELOW 45 DEGREES AT QUINCY AND MONTICELLO, FLORIDA.

Year	Location	Hours prior to:		
		Feb. 15	Feb. 28	Mar. 15
1959-60	Quincy	650	772	918
	Monticello	620	758	962
1960-61	Quincy	864	878	912
	Monticello	917	931	969
1961-62	Quincy	666	668	760
	Monticello	535	536	781
1962-63	Quincy	839	986	986
	Monticello	819	960	1005
1963-64	Quincy	822	942	961
	Monticello	827	913	925
1964-65	Quincy	457	523	705
	Monticello	540	631	706
1965-66	Quincy	703	777	850
	Monticello	744	824	896
1960-66	Quincy Average	714	792	870
	Monticello Average	715	793	892

of Junegold, Suwannee, Sunhigh, Springtime, Earligold, Floridaqueen, Tejon and Armgold.

All references to North Florida in this paper refer to that area West and North of the Suwannee river. Most data reported here was obtained at the North Florida Experiment Station at Quincy, Florida, but variety plantings were begun at the Big Bend Horticultural Laboratory at Monticello, Florida, in February of 1964.

Methods and Materials—Trees were spaced 18 to 25 feet apart and yields taken on tree-ripe fruit. At each harvest 10 representative sound fruits were measured and these measurements were averaged at the end of the season for each tree and variety.

Each year an effort was made to thin the fruit to at least a four inch spacing between each fruit, but in some cases thinning was in-

TABLE 3. BLOSSOMING DATES OF PEACH VARIETIES IN NORTH FLORIDA.

Variety	<u>Date of Full Bloom</u>						
	1960	1961	1962	1963	1964	1965	1966
<u>Early Season</u>							
Earligold	3/5	2/23	2/22	3/4	3/1	3/8	3/14
Springtime					3/5	3/17	3/14
Tejon					3/1	3/8	3/11
Rochon					3/1	3/7	3/10
Flordawon					2/13	1/15	1/14
Flordasun					2/17	2/10	2/16
Sunred (N)					2/17	2/18	2/18
Marcus					3/15	3/29	3/25
Redwin					3/14	4/11	3/28
<u>Midseason</u>							
Flordahome	2/29	2/24	2/23	2/28			
Junegold	3/18	3/1	2/26	3/14	3/4	3/21	3/16
Hiland	3/23	3/2	3/5				
Meadowlark	3/27	2/28	2/26	3/12	3/3		
Maygold	3/30	3/5	3/8	3/14	3/7	3/26	3/21
Robin	3/29	3/1	2/26	2/8	2/19		
Bonanza				3/8		3/28	3/17
Dawne					3/10	3/31	3/25
<u>Late</u>							
Flordaqueen	2/29	2/27	2/26	3/11	3/2	3/20	3/10
Suwannee	3/16	2/28	2/26	3/12	3/6		
Saturn	3/13	3/1	2/26	3/11			
Valigold	4/1	3/1	3/19				
Sunhigh	3/29	3/5	3/8	3/14	3/8		
Fortyniner	3/29	3/5	3/5	3/14	3/4		
Goldrush	3/29	3/3	3/5	3/14	3/8		
Keystone					3/1	3/25	3/18
Loring					3/6	3/28	3/21
Double Delight					3/12	3/31	3/23
Redcap					3/9	4/7	3/27
Southland					3/5	3/26	3/18
Redskin					3/6	3/29	3/22

adequate. In attempting to maintain the pH around 5.8, Dolomitic lime was added when soil tests indicated the need. Up to a thousand pounds per acre of 10-10-10 fertilizer was broadcast in February plus 400 pounds per acre of ammonia nitrate prior to July 15 on mature trees.

Parathion and Sulphur were used for disease and insect control. DDT, and more recently, Dieldrin were used for borer control.

Results and Discussion—Hours of temperature of 45 degrees F or below at Quincy and Monticello, Florida, are indicated in Table 2.

TABLE 4. PEACH HARVEST DATES FOR THE PERIOD 1960 THROUGH 1966.

Variety	1960	1961	1962	1963	1964	1965	1966
<u>Early Season</u>							
Earligold	5/20	5/2	5/8	5/10	5/13	5/11	5/16
Springtime					5/13	5/11	5/16
Tejon					5/13	5/18	5/23
Rochon					5/13	5/11	5/17
Flordawon					5/18		
Flordasun							5/12
Sunred (N)							5/27
Marcus							5/23
Redwin							5/24
<u>Midseason</u>							
Flordahome		6/2		6/4			
Junegold	5/7	5/14	5/31	5/15	5/18	5/24	6/7
Hiland	6/8	5/22	6/8				
Meadowlark	6/20	6/1	6/11	6/2	5/28		6/7
Maygold	6/8	5/22	6/11	5/27	6/4	6/3	6/2
Robin	6/6	5/15	6/12	5/27	6/22		
Bonanza				5/27		6/2	6/17
Dawne					5/18	6/9	6/1
<u>Late</u>							
Flordaqueen	6/24	5/31	6/11	6/4	6/11	6/3	6/10
Suwannee	6/26	6/9	6/20	6/10	6/22		
Saturn	7/6	6/5	6/25	6/24			
Valigold	6/17	6/9	6/25				
Sunhigh	6/29	6/20	6/25	6/18	6/22		
Fortyniner	7/12	6/29	6/28	7/3	7/1		
Goldrush	6/29	6/16	6/29	6/26	6/22		
Keystone					6/17		6/24
Loring					6/22		7/7
Double Delight					6/30		7/12
Redcap						6/9	6/13
Southland							7/1
Redskin							7/21

These chilling hours determine when a variety will flower and fruit.

Date of full bloom for varieties are listed in Table 3. An irrigation was not available in dry years, maturity was advanced by short droughts and delayed by long droughts. Sunhigh has previously been considered a 750 chilling hour variety, but Table 3 indicates that it

flowers in a similar manner as Maygold, a 650 chilling hour variety.

Peach harvest dates for period 1960 through 1966 are shown in Table 4.

Fruit sizes of the varieties, expressed by weight, are compiled in Table 5.

Average yields in pounds of fruit per tree are shown in Table 6. In comparing these yields

TABLE 5. FRUIT SIZE OF PEACH VARIETIES IN NORTH FLORIDA FOR THE PERIOD 1960 THROUGH 1966.

Variety	Average weight per peach in pounds							Average
	1960	1961	1962	1963	1964	1965	1966	
<u>Early Season</u>								
Earligold	.07	.11	.08	.07	.12	.15	.10	.10
Springtime					.09	.16	.10	.12
Tejon					.14	.19	.13	.15
Rochon					.08	.17	.13	.13
Flordawon					.16			.16
Flordasun							.15	.15
Sunred (N)							.13	.13
Marcus							.16	.16
Redwin							.13	.13
<u>Midseason</u>								
Flordahome		.23	.14					.18
Junegold	.11	.20	.05	.28	.12	.21		.16
Hiland	.13	.22	.25					.20
Meadowlark		.08	.15	.16	.12			.13
Maygold	.13	.16	.16	.19	.19	.16	.14	.16
Robin	.07	.15	.17	.15	.21			.15
Bonanza				.19		.17	.24	.20
Dawne					.12	.14	.11	.12
<u>Late</u>								
Flordaqueen	.22	.30	.13	.15	.21	.29	.21	.25
Suwannee	.21	.22	.34	.22	.15			.23
Saturn	.17	.21	.12	.16				.16
Valigold	.18	.29	.25					.24
Sunhigh	.22	.21	.27	.29	.11			.22
Fortyniner	.16	.28	.19	.19	.12			.19
Goldrush	.17	.16	.18	.20	.11			.16
Keystone					.20		.21	.20
Loring					.25		.21	.23
Double Delight					.16		.16	.16
Redcap					.19	.22	.16	.19
Southland							.21	.21
Redskin							.14	.14

it is always necessary to consider the age of the tree.

Table 7 summarizes probable chilling hour requirements, percent of fruit overcolor, flesh color, type of stone, fruit size and average tree yield.

Sufficiently tested varieties could be grouped

according to their usefulness in North Florida as follows: (1). Suitable for commercial production—Early, Earligold or Springtime (white peach); midseason, Junegold, Maygold; and late, Suwannee, with Sunhigh recommended for limited trial. (2). Fruit appearance or shipping quality lower than Maygold—Robin, Goldrush,

TABLE 6. YIELDS OF PEACH VARIETIES IN NORTH FLORIDA.

Variety	Average yield in pounds per tree						
	1960	1961	1962	1963	1964	1965	1966
<u>Early Season</u>							
Earligold	35(3)	26(4)	75(5)	169(6)	78(7)	6(4)	96(5)
Springtime					57(3)	1(4)	46(5)
Tejon					73(3)	5(4)	88(5)
Rochon					89(3)	5(4)	112(5)
Flordawon					27(3)	0(4)	0(5)
Flordasun							158(5)
Sunred							33(5)
Marcus							44(5)
Redwin							31(5)
<u>Midseason</u>							
Flordahome		3(3)	0(4)	15(5)			
Junegold	29(3)	46(4)	84(5)	76(6)	159(7)	8(4)	100(5)
Hiland	62(4)	39(5)	24(6)				
Meadowlark		22(3)	33(4)	94(5)	24(6)		
Maygold	39(3)	57(4)	141(5)	105(6)	107(7)	14(4)	59(5)
Robin	27(4)	2(5)	10(6)	7(7)	77(5)		
Bonanza				2(1)	0(2)	4(3)	16(4)
Dawne					18(3)	4(4)	8(5)
<u>Late</u>							
Flordaqueen	40(5)	3(6)	100(7)	84(5)	180(4)	2(5)	166(6)
Suwannee	69(5)	78(6)	26(7)	95(8)	153(7)		
Saturn	28(3)	40(4)	86(5)	33(6)			
Valigold	26(4)	14(4)	5(5)				
Sunhigh	123(5)	145(6)	137(7)	121(8)	243(9)		
Fortyniner	61(4)	99(5)	82(6)	95(7)	34(8)		
Goldrush	35(4)	54(5)	50(6)	120(7)	85(8)		
Keystone					28(3)	0(4)	109(5)
Loring					30(3)	0(4)	133(5)
Double Delight					92(3)	0(4)	16(5)
Redcap						5(4)	22(5)
Southland							79(5)
Redskin							47(5)

Fortyniner, Valigold, Flordaqueen, Tejon, Rochon, and Meadowlark. (). Chilling requirement too high—Hiland. (4). Chiefly of ornamental value—Saturn, Flordahome, and Bonanza. (5). Too low chilling—Flordawon.

Summary—Variety trials from 1960 to 1966 in the North Florida area indicate that Maygold, Junegold, and Suwannee are best for commercial production.

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TABLE 7. CHARACTERISTICS OF PEACH VARIETIES TESTED IN NORTH FLORIDA.

Variety	Chilling Hours	Percent Over- color	Flesh Color	Stone Free or Cling	Pounds Fruit Size	Average yield in pounds per tree.
<u>Early Season</u>						
Earligold	600	70	Yellow	Cling	.10	69
Springtime	630	80	White	Cling	.12	35
Tejon	400	35	Yellow	Cling	.15	55
Rochon	450	80	Yellow	Cling	.13	69
Flordawon	250	60	Yellow	Semi	.16	9
Flordasun	300	50	Yellow	Semi	.15	158
Sunred	300	88	Yellow	Cling	.13	33
Marcus	850	60	Yellow	Cling	.16	44
Redwin	850	30	White	Cling	.13	31
<u>Midseason</u>						
Flordahome	400	25	White	Free	.18	6
Junegold	630	75	Yellow	Cling	.16	72
Hiland	750	90	Yellow	Cling	.20	42
Meadowlark	650	50	Yellow	Cling	.13	43
Maygold	650	88	Yellow	Cling	.16	78
Robin	660	85	White	Free	.15	25
Bonanza	650	25	Yellow	Cling	.20	5
Dawne	850	45	Yellow	Cling	.12	10
<u>Late</u>						
Flordaqueen	550	75	Yellow	Semi	.25	82
Suwannee	650	80	Yellow	Free	.23	84
Saturn	650	40	Yellow	Free	.16	47
Valigold	660	70	Yellow	Free	.24	15
Sunhigh	650	70	Yellow	Free	.22	154
Fortyniner	650	70	Yellow	Free	.19	74
Goldrush	600	75	Yellow	Free	.16	69
Keystone	750	70	Yellow	Cling	.20	46
Loring	750	60	Yellow	Free	.23	54
Double Delight	750	40	Yellow	Semi	.16	36
Redcap	750	75	Yellow	Cling	.19	13
Redskin	750	80	Yellow	Free	.14	47
Southland	750	65	Yellow	Semi	.20	79