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Performance of Peach Varieties for Commercial Production in Central Alabama

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PEACH PRODUCTION in central Alabama reached an all-time high of 800,000 trees in 1963. Since then peach plantings have dropped to 400,000 trees, and more will be removed in the fall of 1966.

Several factors have caused the reduced acreage of peach trees. Some growers stated they were unable to make a profit from commercial peach production, whereas others blame a shortage of farm labor.

During some periods of the harvest season, there have been more peaches offered on the local markets than would be consumed at a price profitable to growers. Peach growers who ship out of state find heavy market competition from other Southeastern States. The resulting reduction in price discourages out-of-state shipment.

Adverse weather seriously affects production of peaches. Lack of chilling, excessive rainfall during critical periods, extremely low temperatures during winter, heavy frost during early fruit development, and hail and wind storms are common causes of crop losses.

VARIETY PERFORMANCE UNDER VARIOUS CLIMATIC CONDITIONS

Since varieties vary in terms of their ability to withstand adverse weather con-

ditions, the variety testing project at the Chilton Area Horticulture Substation, Clanton, has been used to evaluate test varieties on the basis of how they are affected by climatic conditions. This publication summarizes results of this evaluation during the 1963-66 test years.

1963 Results

In 1963, accumulated hours below 45°F. reached 1,408 by February 15. A low of 0° on January 24 accounted for extensive dormant bud kill. Additional bud kill may have occurred from the 11° and 15° lows of February 22 and 27, respectively. The approximately 10 inches of rainfall in the last half of June, during harvest period, made disease control difficult. Performance of peach varieties under such climatic conditions is given in Table 1.

1964 Results

Accumulated hours below 45°F. totaled 1,419 by February 15, 1964. Low temperatures that may have affected bud survival occurred on December 16 and 19 (11° and 14°, respectively), 14° on January 15, and 26° after bloom on March 30. One-third of the fruit was damaged by hail on April 28. Only 0.69 inch of rain fell during May. On June 21, hail again damaged 95 per cent of the

TABLE 1. 1963 RATINGS OF PEACH VARIETY PERFORMANCE*

Variety	Date of full bloom	Date of first harvest	Fruit size	Skin color	Flesh color	Stone free-ness	Flesh firm-ness	Dessert quality	Yield	Pct. live buds after Jan. 24 freeze
Springtime ..	3-22	5-12	6	8	W	0	5	6	4	10
Cardinal	3-22	5-24	8	9	Y	2	9	9	3	21
Hiland	3-18	no fruit	because of freeze						0	2
Dixired	3-22	5-29	8	9	Y	1	9	8	10	38
Redcap	3-20	5-24	9	8	Y	4	9	9	3	12
Coronet	3-18	no fruit	because of freeze						0	1
Sentinel (FV 173-47) ..	3-20	6-21	6	9	Y	9	9	9	8	10
Regina	3-20	6-21	6	9	Y	9	9	9	10	37
Ranger	3-22	6-21	9	9	Y	10	8	10	10	38
Keystone	3-18	6-21	10	8	Y	10	10	9	2	5
Redglobe	3-20	6-28	9	9	Y	10	10	8	10	20
Blake	3-22	7-3	8	10	Y	10	10	9	10	20
Redskin	3-18	7-10	8	9	Y	10	10	9	10	42
Dixiland	3-18	7-10	10	8	Y	10	10	9	4	23
Alred Elberta	3-19	7-10	10	10	Y	10	10	9	10	25
Regular Elberta	3-18	7-10	10	8	Y	10	9	9	10	33
Rio-Oso-Gem	3-20	7-22	10	8	Y	10	10	9	10	36

* Rating: 0 = poor, 10 = excellent.

TABLE 2. 1964 RATINGS OF PEACH VARIETY PERFORMANCE*

Variety	Date of full bloom	Date of first harvest	Fruit size	Skin color	Flesh color	Stone free-ness	Flesh firm-ness	Dessert quality	Yield
Springtime	3-20	5-10	6	8	W	0	5	6	2
Cardinal	3-22	6-3	8	9	Y	2	9	9	5
Hiland	3-20	no fruit	because of dormant freeze, trees removed						
Dixired	3-24	6-8	8	9	Y	1	9	8	10
Redcap	3-22	6-8	8	9	Y	2	9	9	5
Coronet	3-20	no fruit	because of low temperatures, trees removed						
Sentinel (FV 173-47) ..	3-21	6-11	10	8	Y	8	9	9	4
Regina	3-19	6-25	6	9	Y	9	9	9	3
Ranger	3-24	6-24	9	9	Y	10	8	10	10
Keystone	3-22	6-17	10	9	Y	8	7	8	2
Redglobe	3-22	almost no fruit	because of low temperatures						
Washington	3-21	7-4	10	9	Y	10	9	10	2
Redtop	3-20	7-4	8	9	Y	9	9	9	9
Dixiland	3-19	7-12	10	9	Y	10	10	9	2
Blake	3-22	7-17	10	9	Y	10	10	9	9
Redskin	3-16	little fruit	because of cold damage						
Alred Elberta	3-20	7-17	10	10	Y	10	9	9	2
Regular Elberta	3-20	7-17	10	8	Y	10	9	9	2
Rio-Oso-Gem	3-22	7-24	10	9	Y	10	10	9	9

* Rating: 0 = poor, 10 = excellent.

fruit as well as cracking the bark on the trees. Crop results following this weather pattern are presented in Table 2.

1965 Results

By February 15, 1965, the accumulated hours below 45°F. amounted to 1,156. Low temperatures of 11° caused some bud damage on January 17 and 31. Some damage to blooms that were open resulted from lows of 25°, 22°, and 28°, respectively, on March 20, 21, and 22. These temperatures also killed some flower buds on susceptible varieties that were in the bud swell stage. April and May were dry months, having 1.56 and 0.51 inches of rainfall, respectively. In contrast, June and July were wet months with 9.24 and 6.99 inches of rain, re-

spectively. Variety performance under these conditions is presented in Table 3.

1966 Results

The warm winter of 1965-66 had barely enough chilling for some varieties. Accumulated hours below 45°F. were 453 on January 1; 605 by January 15; 985 on February 1; and reached 1,109 by February 15.

On January 30 the temperature dropped to 0°, killing many fruit buds in the dormant stage. A low of 11° was recorded the following day, January 31. On March 25 a frost and a low of 27° occurred while peaches were in bloom. This further thinned fruit of varieties that were damaged by the January 30 freeze. Variety ratings resulting from

TABLE 3. 1965 RATINGS OF PEACH VARIETY PERFORMANCE*

Variety	Date of full bloom	Date of first harvest	Fruit size	Skin color	Flesh color	Stone free-ness	Flesh firm-ness	Dessert quality	Yield	Cold damage
Springtime	3-30	5-17	3	8	W	0	4	4	10	none
Springgold (FV 9-149)	3-29	5-20	3	8	Y	0	10	6	10	none
Cardinal	4-2	6-2	9	9	Y	1	9	9	8	light
Dixired	4-2	6-7	8	9	Y	2	9	9	10	none
Redcap	3-30	6-7	9	8	Y	2	9	9	10	none
Royalvee	4-1	6-16	8	7	Y	10	9	8	6	medium
Sentinel (FV 193-47)	4-2	6-18	9	9	Y	9	8	9	10	none
Regina	3-29	6-18	7	8	Y	9	9	8	7	medium
Keystone	3-29	6-21	10	9	Y	9	8	9	9	light
Ranger	4-2	6-23	9	8	Y	9	9	9	10	none
Washington	4-2	6-30	10	9	Y	10	9	9	10	none
Redtop	3-29	6-30	5	10	Y	10	10	9	10	none
Redglobe	3-30	6-30	9	9	Y	10	10	10	10	none
Loring (S)	3-29	7-5	9	8	Y	10	9	9	9	light
Blake	4-2	7-12	9	8	Y	10	10	10	10	none
Alred										
Elberta	4-2	7-12	10	10	Y	10	9	9	10	none
Regular										
Elberta	3-30	7-12	10	8	Y	10	9	10	10	none
Redskin	3-28	7-15	8	10	Y	10	9	9	10	none
Dixiland	4-1	7-15	9	8	Y	10	9	10	9	light
Jefferson	4-2	7-21	8	7	Y	10	9	9	10	none
Rio-Oso										
Gem	4-2	7-24	8	8	Y	10	9	9	10	none

* Rating: 0 = poor, 10 = excellent.

TABLE 4. 1966 RATINGS OF PEACH VARIETY PERFORMANCE*

Variety	Date of full bloom	Date of first harvest	Fruit size	Skin color	Flesh color	Stone free-ness	Flesh firm-ness	Dessert quality	Yield	Pct. live buds after Jan. 30 freeze
Springtime	3-24	5-21	3	9	W	0	5	8	3	15.5
Springold (FV 9-149)	3-23	5-21	8	8	Y	0	8	8	8	9.0
Earlired	4-2	5-28	8	9	Y	0	8	9	8	15.6
Cardinal	4-2	6-2	9	9	Y	1	9	9	8	12.3
Dixired	3-25	6-6	8	8	Y	2	8	9	10	57.8
Redcap	3-24	6-1	8	9	Y	0	9	9	5	8.6
Sentinel	3-23	6-11	9	7	Y	5	9	9	5	18.8
Royalvee	3-24	6-13	8	9	Y	3	9	9	10	30.1
Regina	3-22	6-17	10	9	Y	9	10	9	9	19.1
Keystone	3-21	6-20	10	8	Y	9	8	10	1	5.2
Ranger	3-24	6-22	8	8	Y	9	8	9	10	45.0
Redtop	3-22	6-27	9	10	Y	9	10	9	9	26.3
Washington	3-23	6-28	10	9	Y	10	9	10	5	15.0
Redglobe	3-23	6-28	10	9	Y	10	9	9	2	12.5
Loring (S)	3-21	7-9	10	8	Y	10	8	9	2	12.2
Blake	3-24	7-18	9	8	Y	10	9	9	9	49.4
Redskin	3-22	7-18	8	9	Y	10	9	9	10	33.3
Alred										
Elberta	3-22	7-18	9	9	Y	10	9	10	9	26.8
Dixiland	3-23	7-20	10	8	Y	10	9	10	9	23.8
Jefferson	3-23	7-20	10	7	Y	10	8	9	6	9.9
Regular										
Elberta	3-21	7-22	8	8	Y	10	8	10	10	24.6
Rio-Oso-Gem	3-23	7-30	10	8	Y	10	10	9	6	16.1

* Rating: 0 = poor, 10 = excellent.

such climatic conditions are presented in Table 4.

VARIETIES SUGGESTED FOR COMMERCIAL PLANTING IN CENTRAL ALABAMA

Central Alabama peach growers harvested about a 35 to 40 per cent crop in 1966 following an unfavorable season. Based on results reported, a 75 to 80 per cent crop could have been produced if growers had had the following varieties in production: Springold, Earlired, Cardinal, Dixired, Redcap, Sentinel, Redhaven, Royalvee, Regina, Ranger, Redtop, Washington, Loring, Blake, Redskin, Dixiland, Alred Elberta, and Rio-Oso-Gem. These varieties performed well de-

spite a warm winter, a hard freeze on January 30, and frosts during bloom.

Springold, FV9-14 X Springtime, was tested as FV9-149 and named in 1966 by the USDA Field Station, Fort Valley, Georgia. Springold ripens about 3 days after Springtime or about 2 weeks before Cardinal. The fruit is round with a slight tip, small, with light pubescence. About 80 per cent of surface is covered with a bright, attractive, red blush over a yellow ground color. The flesh is yellow, firm but melting, medium in texture, and good in flavor for an early peach. It is relatively susceptible to bacterial spot disease. It requires about 850 hours below 45°F. to satisfy each chilling requirement.

Earlired, Redhaven X B3-674 (Halehaven X B3293 [Halehaven X Oriole]) ripens 3 days before Cardinal. It was released by the USDA from Beltsville, Maryland, in 1960. Earlired trees are vigorous and highly productive. The fruit is ovate with a slightly enlarged suture and tip, but ripens firmly about 7 weeks before Elberta. It requires 850 hours chilling.

Cardinal, Halehaven selfed, was introduced by the USDA Field Station, Fort Valley, in 1951. Cardinal ripens 6½ weeks before Elberta and about 4 days before Dixired. Fruit is yellow fleshed, small, clingstone, well colored, and is fairly firm at shipping maturity. Trees are productive and moderately vigorous. Cardinal is recommended for planting with Hiland. In mild winters Cardinal may exhibit prolonged dormancy, since its 900-hour chilling requirement is higher than for Hiland.

Dixired, Halehaven selfed, was named and introduced in 1945 by the USDA Field Station, Fort Valley. It is the most widely planted early maturing peach. Shipping maturity is 6 weeks before Elberta. Trees are vigorous and productive, but fruits tend to be small in some years unless thinned heavily. Often Dixired fruit will not average 2 inches in diameter. Fruit is well colored, firm, yellow fleshed, clingstone, and good quality. Chilling requirement is about 900 hours. Dixired is recommended for planting with Redcap to offset any prolonged dormancy that Dixired might exhibit in mild winters.

Redcap, Southland X Dixired, was developed by the USDA Field Station at Fort Valley and introduced commercially in 1952. Redcap ripens approximately 6 weeks before Elberta and normally 1 or 2 days before Dixired. Redcap has good quality fruit that is similar to Dixired, yellow fleshed, round, clingstone, medium sized, well colored, and firm at shipping maturity. Chilling requirement is approximately 750 hours.

Redhaven, Halehaven X Kalhaven, was introduced by Michigan State University at South Haven, Michigan. Ripening date is 4 weeks before Elberta and 1 week later than Coronet. Fruit is yellow fleshed, semi-cling at shipping maturity, firm, and of good quality, but skin color is not as good as Dixired. In some years fruit develops a rough suture under Alabama conditions. Trees are productive, vigorous, and need considerable thinning to size properly. Chilling requirement is about 950 hours. It performed well in growers' orchards during the years 1963-1966, and is recommended for the period 4 weeks before Elberta.

Sentinel, FV5-56 X Dixigem, is from a cross made in 1946 and evaluated as FV173-47. Named and released in 1966 by the USDA Field Station, Fort Valley, it ripens with Dixigem and slightly later than Coronet. The fruit is round, medium-sized, freestone when fully matured, and has medium pubescence. At maturity, about 75 per cent of the surface is covered with a red blush over a yellow ground color. The flesh is yellow, firm but melting, and of good flavor and texture. Trees of Sentinel are vigorous, productive, and self-fertile. The variety has good resistance to bacterial spot disease. Chilling required to break the rest period of its buds is approximately 850 hours at or below 45°F.

Regina, formerly tested as F-14, was released by USDA in 1958. The variety resulted from a cross between the variety Sunhigh and an unnamed seedling of W3-16 (Admiral Dewey X St. John). It ripens with Redhaven, and about 3 days later than Coronet. The fruit is medium-sized and ovate, with very light pubescence. About three-fourths of the surface is covered with a bright, attractive red blush over a yellow ground color. The flesh is yellow, firm but melting, smooth-textured, and of good flavor. Trees of Regina are above average in vigor and have been productive.

Ranger, Raritan Rose selfed, was introduced in 1952 by the USDA Field Sta-

tion, Beltsville. Ripening 3 to 3½ weeks before Elberta, its fruit is yellow fleshed, large, well colored, firm, ovate, nearly freestone at shipping maturity, and has good quality. The fruit ripens uniformly and can be harvested in three pickings. Ranger trees are productive and vigorous, and the variety has exhibited high resistance to bacterial leaf spot in Chilton County. Poorly pruned trees tend to develop weak crotches. Ranger is recommended for the same season as Keystone. It has a chilling requirement of about 950 hours.

Redtop, formerly tested as F-15, was released by the USDA in 1961. Redtop resulted from a cross between Sunhigh and an open-pollinated seedling of July Elberta. It ripens between the Regina and Coronet season and that of Redglobe, or about 3½ weeks ahead of Elberta. The fruit is high quality, freestone, and larger than Coronet, but usually not as large as Redglobe. It is almost round with a slightly pointed apex, has light pubescence, and an attractive red blush over ⅓ of the surface when mature. Trees of Redtop are moderately vigorous and productive. They blossom with July Elberta, indicating a low chilling requirement to break the rest period.

Loring, Frank X Halehaven, was introduced by the Missouri Agricultural Experiment Station in 1946. Fruit ripens 1 to 1½ weeks before Elberta, is yellow fleshed, freestone, firm, of good quality and color, medium size, and handles well for commercial packing. Trees are vigorous and productive. Loring has a chilling requirement of about 750 hours and is recommended for the season between Southland and Elberta.

Washington, V.P.I. 15 X Sunhigh, was introduced by the Virginia Agricultural Experiment Station. Its fruit is large, well colored, firm, and freestone. The fruit buds are resistant to spring frost damage. Washington is suggested in the Halehaven season.

Blake, J. H. Hale X Primrose, was introduced in 1953 by the New Jersey Agricultural Experiment Station. Ripening season is one-half week before Elberta. Blake fruit is freestone, yellow fleshed, of good color and quality, and has firm flesh at shipping maturity. Trees are moderately vigorous and tend to set light crops in most years. Chilling requirement is about 750 hours. Blake is recommended for commercial planting to precede Elberta by 3 to 4 days.

Redskin, J. H. Hale X Elberta, was released by the Maryland Agricultural Experiment Station in 1944. It ripens at the same time as Elberta. Redskin fruit has yellow flesh, good color and quality, is freestone, firm, and large when properly thinned. In some years a rough suture will develop. Trees are moderately vigorous and productive. Blossoms tend to set fruit every year. Redskin is moderately resistant to bacterial leaf spot. Chilling is about 750 hours.

Rio-Oso-Gem, parentage unknown, was introduced in 1933 by W. F. Yerkers, of Rio-Oso, California. Fruit ripens 1 week after Elberta, is yellow fleshed, of excellent quality, round, firm, well colored, and of good size when thinned properly. Chilling requirement is about 850 hours. Trees are vigorous and productive. Rio-Oso-Gem is recommended for late market.

Dixiland, FV5-56 (Halehaven selfed) X Dixigem, was released by the USDA, Beltsville, in 1962 after being tested as FV127-1. Dixiland ripens with the variety Redskin and about 2 to 3 days earlier than Elberta. The fruit is ovate, large-sized, and freestone, with light pubescence. At maturity about 50 per cent of the surface is covered with a red blush over a yellow ground color. The flesh is yellow, firm but melting, and of good texture and flavor. Trees of Dixiland are vigorous, productive, and self-fertile. The variety is relatively resistant to bacterial spot disease. The chilling requirement to break the rest period of its

buds is approximately 750 hours below 45° F.

Alred Elberta, a bud sport of regular Elberta, is red all over except for a yellow stripe at the suture. It performs like regular Elberta.

Royalvee, is similar to Dixired in appearance but ripens 7 to 10 days later.

TESTED VARIETIES NOT RECOMMENDED

The following varieties have been tested but are not recommended for commercial planting in Alabama:

After Glow	Early Hiley
Alabama	Early-Red-Fre*
Ambergem*	Early Rose
Arp	Early Triogem
Augbert	Fair Beauty
Autum	Fairhaven
Bell of Georgia	Fay Elberta
Best May	Fireglow
Brackett	Fisher
Brilliant	Flamingo
Burbank Elberta	Gay Elberta
Cannon	Gemmers Early
Champion	Elberta
Cherry Red	Gemmers Late
Coronet	Elberta
Cumberland	Giant Jubilee
Dawne	Goodcheer
Dixigem	Golden Blush
Dixigold	Golden East
Early East	Golden Globe
Early Elberta	Golden Jubilee
Early Gold	Goldenrod

* Varieties recommended for home use.

Halberta	Prairie Daybreak
Halegold	Prairie Rambler
Hale Harrison	Prairie Rose
Brilliant	Prairie Sunrise
Halehaven*	Radiance
Heath Cling	Raritan Rose*
Hiland	Red Bird
Indian Cling*	Red Crest
Jerseyland	Red Elberta
Jewel	Red Rose
J. H. Hale	Redwing
June Elberta	Richaven
June Gold	Robin
June Pink	Rodeo
July Elberta	Shin's Delicious
July Heath	Simpsonred
Keystone	Slappey
Late Rio	Southern Glow
Late Rose	Southaven
Liberta	Springtime
Lizzie	Stark's Delicious
Marcus	Stoner
Maybell	Story Early Elberta
Mayflower	Sullivan Elberta
Meadowlark	Summer Crest
Merrill Brilliant	Summer Rose
Merrill Beauty	Sunbeam
Merrill Dandy	Sunglow
Merrill Fiesta	Sunhaven
Merrill 49er	Sunhigh
Merrill Gem	Sure Crop
Merrill Goldrush	Swanee
Merrill Hale	Triogem
Merrill June	Tulip
Merrill Pageant	Valigold
Missouri	Vanguard
Nector	Vedette
Newday	White Hale
Ozark	White Haven
Polly	White Rose
Poppy	World's Earliest
Prairie Clipper	Yates Late Elberta
Prairie Dawn	Yellow Hiley