—especially to Valsa canker and bacterial leaf spot—and greater firmness. But, as Savage has pointed out in the *American Fruit Grower* (1977) and "The Peach Cultivar Situation in the Southeast," p. 23—who is going to do it? Funds for tree fruit breeding and for training fruit breeders are diminishing rapidly, programs are being terminated as the present breeders retire, advanced generation germplasm is being lost.

The Peach Cultivar Situation in the Southeast

E. F. SAVAGE[1]

The peach cultivars which are grown in the Southeastern United States tend to change more rapidly than in many other peach growing sections. The reason for this is the short life problem which limits the economic life of an orchard to 8-10 years. Therefore, there is no inclination to hold on to a cultivar which is poorly adapted or insufficiently productive to make it worthwhile.

Another factor which determines the cultivars that may be grown in a given area of the southeastern United States is the average number of cold hours below 45° F. available. Basically, there are three climatic zones in the southeastern peach producing area namely, the southern section averaging 550 to 650 hours of cold, the middle section from 650 to 850 hours, and the northern sections cold hours starting at 850 and ranging upwards. These climatic zones definitely limit the cultivars which may be successfully grown. For example, in the southernmost peach section no attempt should be made to grow any cultivar requiring more than 650 hours of cold. In this section there would be insufficient cold to break the rest period of cultivars having a higher requirement. Conversely, in the northern peach growing sections of the southeast for success, no cultivar should be planted that has a cold requirement of less than 850 hours. Cultivars requiring less initiate growth early in the spring and are often severely injured by freezes occurring in February and early March. Production because of blossom and bud injury is low.

Elberta and Hiley were the principal cultivars during the early 1940's and early 1950's. Few trees of these cultivars can be found now in the southeast. However, since it is so well known, Elberta is still used as an index point in describing cultivars developed since the 1950's.

In the southeast at the present time, the principal cultivar in the very early slot is Camden ripening some 58 days before Elberta. It has been heavily planted in South Carolina. It is relatively small and somewhat subject to split-pitting. Following Camden and ripening 55 days before Elberta are: Springold, Harbinger, Bicentennial. Springold is by far more widely planted even though it is genetically small. In the 50 days before Elberta season, Springcrest, Springbrite, and Sunbrite are the principal cultivars. Springcrest is the most popular of these three. It is interesting to note that California has set more than 2,500 acres of this cultivar which was developed in the southeast. It should

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be pointed out that none of these cultivars previously named have been sufficiently tested as yet to determine their commercial value. In the 48 days before Elberta period, Junegold and Candor are the competitive cultivars. In Georgia, Junegold is the No. 1 cultivar in its season. Junegold is only successful in the middle and southern peach sections of the southeast because of its low chilling requirement (650 hours). It is not productive in the northern peach sections of the southeast. In the 42 days before Elberta period, Maygold for the southern section, Redcap for the middle peach section, and Dixired for the northern peach section are the principal and successful cultivars. Recently, there has been a resurgence in the planting of Redcap. Although Coronet is not too successful in the northern peach sections, it is being planted heavily in the middle production section since it is about the only good commercial cultivar ripening 5 weeks ahead of Elberta. Redhaven, ripening 4 weeks ahead of Elberta, is an excellent variety for the northern peach section. Harvester, because of its season of ripening 21 days before Elberta, is the No. 1 cultivar being planted in much of the southeast. This is a gamble since practically nothing is known as to its commercial potential. Indications are that it will be small-sized. In Georgia it is the No. 2 cultivar in number of trees and is still being planted widely. In the 3 days before Elberta season, the leading cultivars are Redskin and Blake. Redskin is more popular in Georgia, while Blake predominates in South Carolina in this season. Jefferson, ripening 3 days after Elberta, and Rio Oso Gem, 6 days after Elberta, are the most popular late cultivars. There are few plantings of these late cultivars.

Indications from surveys show increases in the number of trees of early maturing cultivars and decreases in the plantings of the mid and late maturing cultivars. This is the result of competition of highly colored early cultivars of the peach areas of middle and northern United States with the later cultivars of the south. It is difficult to compete with this localized production near the population centers which of course requires less transportation and is in a better competitive position.

There is great need to test cultivars extensively at several locations before introduction. This can be done by highly trained experienced men, usually peach breeders or pomologists on the staff of various experiment stations. This will require more time before releasing a cultivar, but it will help to prevent growers having heavy financial loss by planting the wrong cultivars. Furthermore, small test orchards might well be used by growers themselves to test adaptability of new cultivars in their own areas. Much more cultivar testing should be done before setting commercial orchards. Actually the planting of poorly adapted cultivars is one of the causes of great financial loss to growers.

Increased production costs will necessitate consistent annual yields. Some of the cultivars which are consistent annual croppers include Camden, Dixired, Redhaven, Redglobe, and Redskin. A cultivar, to be successful, must make good size, be very firm to stand shipment and store abuse, and have satisfactory quality.

In the future, with soil and water pollution factors becoming more important each year, cultivars must be developed which are resistant to disease and insects. Rootstock research is imperative. Our present rootstocks not only are not too well adapted to southeastern climatic conditions but are really not resistant to the various root diseases, borers, and nematodes.

Recently there has been much elimination of peach breeding research. On the retirement of many of our present peach breeders, there is no plan for their replacement. At a time when there is great need for new improved peach cultivars which are resistant to or can tolerate insects, diseases, nematodes, adverse soil conditions and climatic factors, research is being severely curtailed. When more testing of cultivars should be done to help prevent grower losses, it is most difficult to get funds and personnel for peach testing. This is most foolhardy and should not be. There should be a substantial increase and not the current decrease in funds for peach cultivar breeding and testing research.

Peach Cultivar Situation in the Midwest and Central South

R. C. ROM AND J. N. MOORE[1]

The term "Midwest and Central South" inaccurately describes a geographic region which extends 1,025 miles north to south (Central Indiana to Central Texas) and 1,450 miles east to west, (Central Tennessee to Western Colorado).

This geographic region includes extremes of climate, i.e. over 50″ of rainfall at Knoxville, Tennessee, to less than 10″ at Farmington, New Mexico. There is also a wide variation in temperature. Portions of Texas and Louisiana have average January temperatures above 45°F (7.2°C) while Colorado, Missouri, Indiana, Kentucky and Illinois, experience not uncommonly minimum winter temperatures sufficiently low to kill peach flower buds (Table 1).

Yet within this area, which includes twelve major peach producing states, growers have found by tradition and experience fruit growing sites which

Table 1. Climatological data for reporting stations in or adjacent to peach production areas in the Midwest and Central South.

State	Station	Av. in. rain/yr.	Av. temp (°F) Jan.	Av. temp (°F) July	Record temp. (°F) Min.	Record temp. (°F) Max.
	Chattanooga		42.5	78.6	−10	104
	Princeton		37.2	78.7	−30	108
	Carbondale		35.3	80.0	−24	113
	Vincennes		32.3	79.2	−19	111
	Campbell		37.4	80.8	−24	114
	Centerpoint		46.0	82.3	−10	112
	Wichita		32.2	80.4	−22	114
	Poteau		41.7	83.2	−16	120
	Ruston		48.0	82.3	−15	108
	Nacogdoches		48.2	81.7	−4	110
	Fruitland		29.6	74.0	−21	110
	Grand Junction		25.0	77.9	−21	105

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