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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account for a presently estimated 32,600 acres (14,000 ha) of production and non-bearing plantings of 6000 acres (2,430 ha), (Table 2).

All these states historically have had an overplanted, undermanaged peach indusrty which became commercial in nature following the Civil War or early in the 20th century. The present industry flourishes or fails largely on the basis of cultivar availability and adaptability.

In an area as large and as diverse climatewise as the Midwest and Central South, it is difficult to find common denominators in the cultivar offerings recommended and their use in production. A survey of research and extension personnel requesting the 10 most recommended cultivars in each of the 12 states revealed that 37 cultivars are recommended. Growers undoubtedly select from catalogues additional cultivars not on their state's recommended list (Table 3). This extensive list is pared some if the several short chilling (less than 200 hr) peaches recommended for mid Louisiana and southeast Texas are deleted from the discussion. From the remaining choices several cultivars emerge as being dominant and adapted to the region. A review of the 15 most commonly recommended cultivars (Table 4) indicates that a harvest spread of 50 days is generally available to growers, that 750-850 hours of chilling requirement is not a major concern and that resistance to bacterial leaf spot is an important factor in a recommendation. The three most widely recommended cultivars, although not the most heavily planted, are Redskin, generally considered an Elberta replacement, Redhaven and Loring. All of these peaches were introduced to the commercial trade over 30 years ago. Their dominance is due to a combination of maturity season, high bacterial leaf spot resistance and market qualities. It is of interest to note

Table 2. Current estimates of peach acreage in the Midwest and Central South.[1]

	Estimated acres		Estimated % 15 yr. future increase or decrease
	Bearing	Non-bearing	
TN			+10
KY			−5 to 25
IL			−35
ID			0
MO			+20
AR			+5
KS			+10
OK			+20
LA			+20
TX			+10
NM			
CO	3,000	500	−30

[1]Source: Reports from pomologists and extension specialists in these states.

that the Loring peach is the only cultivar on this list which originated in the geographic area.

Researchers and extension people in the 12 states surveyed gave opinions on promising cultivars not yet fully tested by long experience, on cultivars which seem to be declining by virtue of poor acceptability and marginal adaptability and on trends and outlooks for peach production.

The five newer cultivars which seem to have the most widespread promise are Bisco (1968 NC), Reliance (1927 NH) Harken (1970 Canada), Pekin (1968 NC) and Harvester (1973 LA). On the other hand those cultivars being down graded or no longer recommended in many of the states are: Elberta and Elberta types, Halehaven, Richaven, Sunhaven and Glohaven. These peaches are being replaced by superior types noted in Table 4.

The peach industry in this 12 state area is not necessarily at the crossroads, but perhaps it is pausing at a fork in the road trying to decide the

Table 3. Top ten peach cultivars recommended for planting by states, Midwest and Central South.

	TN	KY	IL	ID	MO	AR	KS	OK	LA	TX	NM	CO
Belle of Georgia												
Bicentennial									X			
Blake						X	X					X
Candor					X	X						
Cresthaven		X	X	X	X	X	X					
Dixired						X		X	X			
Earliglo								X				
Elberta (types)			X					X				X
Garnet Beauty		X	X									
Glohaven			X	X		X	X					X
Golden Jubilee		X					X					
Golden Red								X				
J. H. Hale								X				
Halehaven								X				
Harken		X	X	X	X	X	X					
Harbrite				X								
Harmony, C.				X								
Harvester									X	X		
Jerseyland					X							
June Gold										X		
Keystone									X			
Lagold									X			
Loring	X	X	X	X	X	X	X	X		X		
Madison	X	X	X	X								
Ranger						X	X	X		X		
Redcap									X			
Redglobe						X			X			
Redhaven	X	X	X	X	X	X	X	X				X
Redskin	X	X	X	X	X	X	X	X		X		X
Rio-Oso-Gem	X	X	X		X							
Sentinel									X	X		
Springold					X				X	X		
Suncrest												X
Sunhigh	X											
Surecrop									X			
Velvet	X											
West Pride												X

direction which promises the best future. There is pessimism expressed as follows: competition from other crops, particularly quick cash crops, is diverting grower interest; a continuous succession of bad weather has discouraged growers in marginal areas; labor shortages and labor quality are common and government regulations are frustrating management initiatives. As a consequence, Colorado, Kentucky and Illinois anticipate a thinning in the ranks of peach producers in the next 5 to 15 years with concomitant reduced production. There is an encouraging measure of optimism for

the future in the other 9 states. This outlook is based on trends toward new markets which almost totally means "Pick Your Own." This attitude toward new markets is worthy of some examination. The demand for a "Pick Your Own" operation depends on population and transportation. In order to meet these two criteria it is quite conceivable that new plantings will develop on the periphery of population centers on orchard sites and in microclimates that may be somewhat marginal. This will require cultivars and rootstocks with greater tolerance to adverse conditions and more disease resistance than their predecessors. Although in any one localized area, any crop loss due to adverse conditions will be spread among several small growers rather than catastrophic to one large operation. As the "Pick Your Own" customer consumer becomes more familiar with the local producer, he or she will hold the producer more responsible for peach quality than when fruit was purchased from a supermarket. The grower, recognizing this fact, will accept more responsibility in the production of only quality fruit. In this circumstance there will be less incentive to plant early maturing fruit of inferior quality and swing toward a harvest season of manageable length featuring the highest quality fruit. The existing commercial shipping markets will continue to provide an outlet for a large portion of each state's production with the greatest potential in the southeast of Missouri. The potential for a modest expansion in processing cling peaches exists in Arkansas and adjacent states. This future for increased production will be somewhat related to economic conditions influencing cling production in California and Michigan. In addition, the outlook for added production will rely on the development and acceptance of nectarines as a commercial crop for

Table 4. The fifteen most commonly recommended peach cultivars in the Midwest and Central South.

Cultivar	Days before Elberta	Date Introduced	Origin	Chilling Requirements	Bact. leaf spot susc.*
Candor	−48			950	9
Dixired	−41			950	8
Redhaven	−28			950	8
Harken	−26				9
Ranger	−24			900	9
Glohaven	−14			850	7
Redglobe	−14			850	7
Loring	−12			750	8
Madison	−7			850	8
Cresthaven	−7			900	7
Belle of Georgia	−3			850	6
Redskin	−1			750	9
Blake	−1			750	6
Elberta	0			900	7
Rio-Oso-Gem	+3			850	5

*Scale: 1—Susceptible, 10—Resistant.

this geographic region. Nectarines will be a new orchard product that should not compete with local peaches, but rather will add a new dimension in fruit production and sales. The nonmelting flesh nectarines now emerging from breeding programs will, with a little consumer education, become a demand specialty item. The Pick Your Own type of operation provides the personal contact between grower and consumer to accomplish this necessary education toward a new taste in fruit.

Thus, while prospects for continued and sustained production in the Midwest and Central South are good, the future ultimately becomes a responsibility of the fruit breeder. Cultivar development lies in their hands. In assessing the requirements of new cultivars to meet the needs of the area, certain priorities in breeding may be established. An ordering of these on the basis of current need would produce the following list compiled from suggestions received from participants in the survey: 1) increased bacterial leaf spot resistance, 2) greater winter hardiness, 3) more frost resistance in bloom, 4) expanded rootstock capability, 5) improved handling and holding characteristics in fruit, and 6) emphasis on mid and late season maturity dates. Quality, of course is an implied prerequisite, but acceptable quality and appearance are generally found in today's cultivars, whereas the above-mentioned characteristics are presently marginal. In view of the importance of peach breeding to the future welfare of the peach industry, it is alarming that many peach breeding programs in the nation are being discontinued. If we are to retain a strong peach industry, it is imperative that existing peach breeding programs be continued and well supported.

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Peach and Nectarine Cultivars of the West Coast

David W. Ramming[1]

The last 25 years have seen the introduction of many new peach and nectarine cultivars. Both public and private breeders have played major roles in developing these cultivars along with the discovery of many mutations. However, some peach cultivars over 50 years old are still important. The production and acreage for California, Oregon, Washington and British Columbia will be outlined and the major cultivars and trends of the peach and nectarine industry will be discussed.

Production and Acreage

Peach acreage in British Columbia has been increasing at a rate of about 10% a year for the last five years and is expected to continue to increase at the rate of about 5% for the next five years. In 1976, approximately 2,350 acres of peaches, of which 80% were bearing, produced about 15,500 tons.

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