

Strawberry Varieties in the United States—1968*

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The selection of strawberry varieties for commercial production can change faster than any other kind of fruit. Varieties generally reflect a strong environmental adaption. Another strong influence on the success of a variety is its adaption to specific cultural and marketing practices. Disease resistance is increasingly important to reduce risks in growing the crop because of the need for high yields per acre to reduce per unit costs. At this time strawberry production is not increasing and, in fact, every major strawberry region in this country decreased in production in 1967†. The variety picture is changing rapidly and seems to be in a state of flux and this paper may best be used as a reference point for future comparisons.

In preparing this presentation, 31 research and extension workers in all major strawberry producing areas were contacted as well as seven of the more important producers of strawberry plants. In every case a helpful reply was received, and I gratefully acknowledge the generous cooperation extended by all the individuals and nurseries.

Special Areas

The production areas that do not fit the early, mid- and late-spring production patterns will be treated in this section (see table 1).

Perhaps the most significant change in strawberry production in the 1960's has occurred in Florida where most

of the crop is produced during winter and early spring. The 1951-60 average production in Florida was 6,274,000 pounds while the 1961-65 average was 18,448,000 pounds. The 1966 yield was 20,930,000 pounds and the 1967 yield was 17,600,000 pounds. This sharp increase in production was accompanied by changing varieties and production areas. Florida 90, which occupied up to 90 per cent of the acreage, is still the leading variety but is now down to about 50 to 60 percent of the acreage. Dabreak, a Louisiana variety, now occupies 35 per cent of the state's acreage. Several California varieties have created a lot of interest. Torrey and Tioga are being planted to a limited extent in all areas. A strawberry breeding program exists at the Sub-Tropical Experiment Station with primary interest in verticillium wilt resistance, and has several selections at the advanced testing stage.

California, with a production of 208,800,000 pounds in 1967, produced about 44 per cent of all the strawberries grown commercially in the United States. Four areas of production can be identified in that state. They are 1) the Southern California area from Ventura south to San Diego, 2) the Coastal area near Santa Maria, and Arroyo Grande north of Santa Barbara, 3) the Central Valley area near Fresno and Modesto and 4) the Central Coast area around Salinas, Watsonville, and San Jose.

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†All production data were obtained from Vegetables—Fresh Market, Annual Summary, Statistical Reporting Service, U.S.D.A.

Table 1. Strawberry varieties grown in the special production areas and early spring production states.

State	1967 Production (1000 pounds)	Leading Variety (s)	Other Important Varieties	New Varieties
Special Area				
Florida	17,600	Florida 90	Dabreak, Torrey Tioga	Salinas, Fla. 113
California	208,800			Salinas, Sequoia
Central Coast		Shasta	Tioga, Goldsmith	
Central Valley		Tioga	Fresno	
Santa Maria		Tioga	Fresno, Torrey Goldsmith	
Southern Calif.		Tioga	Fresno, Aliso, Solana	
Early Spring				
Louisiana	11,780	Headliner, Dabreak		
Texas	1,500	Florida 90	Pocahontas Dixieland	

The Southern California area, which produces the earliest fruit, uses several varieties. Lassen was the leading variety in this area but Tioga leads the list now. Tioga is followed by Fresno, D8, Aliso and Solana in that order. In the Santa Maria-Arroyo Grande area, Tioga, Fresno and Torrey rank 1, 2, 3. The Goldsmith variety and the D8 selection are also important in this area. Goldsmith and the selection D8 were developed by the California Strawberry Institute. The Central Valley area has two important varieties, Tioga and Fresno, with Tioga being the more important. Shasta is still the leading variety in the Central Coast area, with Tioga and Goldsmith also important varieties. California has this year introduced the variety Sequoia, which is very early, large and highly flavored.

In general, the industry seems to have stabilized somewhere around 8000 to 9000 acres, after the boom in the fifties that saw as much as 17,000 acres in production in 1958. The changing variety picture, as well as

cultural change, has contributed to increased yields per acre. Yields have risen in California from an average of 12,600 pounds per acre in 1958 to an average of 26,100 pounds per acre in 1967.

Early Spring

The early spring production comes from Louisiana and Texas as well as California. Louisiana's strawberry production, for the most part, comes from two varieties, Headliner and Dabreak, which make up 90 to 95 per cent of the acreage. Both of these varieties originated from the breeding program at Louisiana State University. This breeding program has two selections under extensive grower trials, and one or both selections may be named in the next year. Disease resistance specifically resistance to crown rot, is receiving a lot of attention from the strawberry breeders in Louisiana.

Texas has not had a strawberry research program in recent years, and this may be the reason it has not realized its potential in strawberry

Table 2. Strawberry varieties grown in the mid-spring production states.

State	1967 Production (1000 pounds)	Leading Variety (s)	Other Important Varieties	New Varieties
Alabama	1,300	Dixieland, Pocahontas	Albritton, Klonmore	Dabreak, Head- liner, Earlidawn
Virginia	4,200	Dixieland, Pocahontas	Albritton, Surecrop	Earlibelle
Arkansas	7,800	Tennessee Beauty, Blakemore	Surecrop, Albritton, Dixieland	
Tennessee	6,720	Tennessee Beauty, Blakemore	Pocahontas, Dixieland, Surecrop	
Oklahoma	3,600	Blakemore	Tennessee Beauty, Surecrop,	Earlibelle
Kentucky	3,00	Pocahontas, Tennessee Beauty	Surecrop, Earlidawn	Earlibelle Sunrise, Citation
Kansas		Surecrop	Pocahontas, Sparkle	Garnet, Fletcher
Illinois	4,050	Surecrop	Midway, Pocahontas	Sunrise
Missouri	2,080	Surecrop	Pocahontas, Blakemore	Sunrise
Maryland	2,320	Surecrop	Earlidawn, Pocahontas, Midway	Sunrise
North Carolina	4,200	Albritton	Tennessee Beauty, Surecrop	Earlibelle

production. Florida 90 is the leading variety in the south Texas area. Texas is so large that other areas of the state would be classed in the mid-spring group. Other important varieties in Texas are Pocahontas and Dixieland.

Mid-Spring

Alabama and Virginia have similar variety pictures (see table 2). Dixieland is the leading variety in each case, followed by Pocahontas. Albritton and Klonmore are also important varieties in Alabama, while Albritton and Surecrop occupy significant acreages in Virginia. Arkansas and Tennessee each report Tennessee Beauty and Blakemore as their most important varieties. Surecrop, Dixieland and Albritton are also important

in Arkansas, approximately in that order. In Tennessee you would find Pocahontas, Dixieland and Surecrop occupying important acreages. Blakemore, in addition to being an important variety in Arkansas and Tennessee, is the leading variety in Oklahoma. Tennessee Beauty and Surecrop fill out the variety list in Oklahoma, with some interest in Earlibelle and Earlidawn. Earlibelle also is creating interest in Alabama, Arkansas and Virginia. The variety pattern in Kentucky is similar to the variety patterns in the mid-spring areas already discussed. Pocahontas and Tennessee Beauty are in the one-two positions, while Surecrop and Earlidawn are represented by smaller acreages. Sun-

Table 3. Strawberry varieties grown in the late spring production states.

State	1967 Production (1000 pounds)	Leading Variety (s)	Other Important Varieties	New Varieties
Oregon	95,200	Northwest	Marshall, Hood, Shasta	
Washington	35,840	Northwest	Hood, Marshall, Puget Beauty	Raritan
Ohio	4,800	Midway	Pocahontas, Sure- crop, Robinson	
Michigan	29,240	Midway	Robinson, Sparkle, Surecrop	
Indiana	4,620	Pocahontas	Midway, Surecrop	
Wisconsin	4,940	Robinson, Midway	Sparkle, Jersey- belle, Sunrise	Badgerbelle
Massachusetts	1,591	Jerseybelle, Catskill	Sparkle, Vesper, Earlaldawn	
Connecticut	1,050	Jerseybelle, Robinson	Midway, Catskill, Sparkle, Vesper	
New Jersey	9,120	Jerseybelle	Midway, Sunrise, Pocahontas, Surecrop	Raritan, Red- chief
New York (Long Island)	6,480	Jerseybelle	Midland, Surecrop	Raritan
New York		Catskill	Sparkle, Midway Earlaldawn, Empire	Gala, Garnet
Maine	1,155	Sparkle, Catskill	Surecrop, Maine 55	
Pennsylvania	5,040	Catskill	Robinson, Vesper, Surecrop	

rise and Citation are two of the newer varieties of interest to Kentucky growers.

Another group of states in the mid-spring production area, north of those already discussed, have Surecrop as the leading variety. These states are Kansas, Illinois, Missouri and Maryland. It is interesting to note that Pocahontas is also an important variety in each of these four states. Both of these varieties are important over a wide area of the east and mid-west. Surecrop is a variety of consequence in 15 states and Pocahontas is indicated important in 11 states. Although both these varieties are common to a wide area, Surecrop has a more northern area of adaptation and has the larger acreage as indicated by

nursery sales. Nursery sales also indicate Pocahontas is declining in popularity. The acreage occupied by the Midway variety would indicate some popularity in Illinois and Maryland. Garnet and Fletcher are two of the newer varieties growers are interested in trying in Kansas. Sunrise is stimulating interest in Maryland, Missouri and Illinois. Redchief, a new U.S.D.A. variety resistant to five races of red stele, is suggested for trial in Missouri.

North Carolina, the final state in the mid-spring group lists Albritton as the leading variety for the eastern part of the state where most of the commercial varieties are located. Tennessee Beauty and Surecrop are varieties for western North Carolina and

Earlibelle and Sunrise are the newer interesting varieties suggested for trial.

Late Spring

The states in this group produced 199,076,000 pounds of strawberries in 1967, second only to the special areas. Washington and Oregon (see table 3) accounted for about 65 percent of the strawberries produced by the late spring states with most of these berries going to the processors. The leading variety in both Washington and Oregon is Northwest, a Washington state introduction. Marshall is still of some importance in both states but seems to be losing ground. Hood, a newer variety jointly introduced by Oregon and the U.S.D.A., seems especially well suited to the preserving trade and is rapidly increasing in acreage. Shasta is important in some areas of Oregon, while Puget Beauty is used as an early variety in north-west Washington.

Utah, at one time, was included in the list of states that were commercial producers of late spring strawberries. It is a comment on our times that the availability of fresh strawberries from California has caused the decline in production in Utah. Shasta is the leading variety with Lindalicious and Utah Shipper locally important. These last two varieties were developed in northern Utah.

Ohio, Indiana, Michigan and Wisconsin have similar variety pictures. Midway is the leading variety in Ohio and Michigan and an important variety in Indiana, Wisconsin, western Pennsylvania and western New York. Surecrop occupies significant acreage in Ohio, Indiana and Michigan. Robinson, which used to be the leader in Michigan, still ranks high in Ohio, Michigan and Wisconsin but is declining in popularity. Sparkle and Sunrise are of some interest in the more northern areas while Pocahontas is grown widely in Ohio. Raritan, a new va-

riety from New Jersey, seems to have some interest for the Ohio growers due to the excellent testing program in that state. Badgerbelle, a new Wisconsin variety, may replace Robinson in that state.

Massachusetts, Connecticut, the Long Island portion of New York and New Jersey form an area where Jerseybelle is the leading strawberry variety. Although well adapted, its position seems to be weaker and this may be due to a lack of firmness in the southern part of this region. Midway has some interest in the southern part of this area, while Catskill and Robinson are planted in the central part of Massachusetts and Connecticut. Sunrise along with Midland are used for early varieties. Redchief and Raritan are recommended for trial on Long Island and in New Jersey, while growers in Connecticut and Massachusetts have yet to see these two.

Maine, upstate New York and Pennsylvania round out the late spring production area and favor Catskill. It is productive with them and seems to fit their marketing systems. These resort areas with their cooler temperatures also favor Sparkle, Empire, Robinson and Vesper. They are quite interested in the new varieties Gala and Garnet from New York, and the New Jersey variety Raritan.

A list of the most important varieties in the United States, on a tonnage basis, would include Northwest, Tioga, Shasta, Headliner, Dabreak, Florida 90, Tennessee Beauty, Midway, Blakemore, Surecrop, Pocahontas, Jerseybelle, and Albritton.

Perhaps all we can learn from such a quick look as this is that change has occurred and will occur quickly as our population uses new foods and food products. The changing society also places new stress on agriculture, and certainly this is reflected in the changing variety picture as the industry moves to meet these changes.