

Performance of
NEW STRAWBERRY VARIETIES IN MISSOURI

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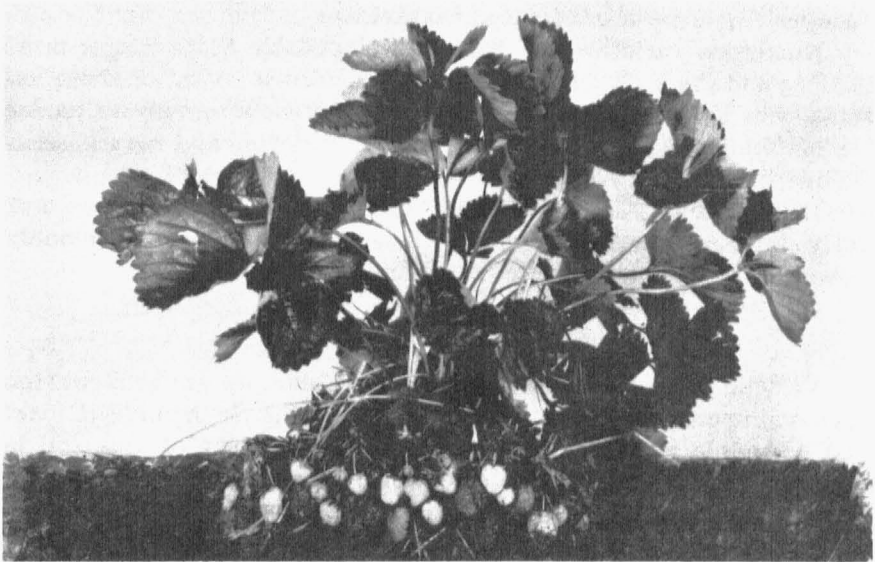


Figure 1.—Armour, a variety recently introduced by the University of Missouri Agricultural Experiment Station.

Strawberry varieties tend to be very limited in their range of adaptation. Day length, winter and summer temperatures, soil conditions, incidence of insects and disease, market demands, etc. are factors which determine the adaptability of a variety.

A number of varieties have become popular for a time and have later been replaced by better varieties. Moreover, changing market demands such as the comparatively new freezing industry require different varieties. For nearly 30 years Aroma, an excellent

shipping variety, was the leading variety in southwestern Missouri. But it is being replaced by Blakemore due to the excellent demand for a variety suitable for freezing and the higher productivity of the Blakemore. A highly productive variety with good shipping qualities is needed to replace the Aroma on all but the newly cleared timber lands of this section. Even the Blakemore, the leading variety in the United States, has several serious shortcomings.

The soils in Missouri are becoming infested with the fungus organism that causes the root rot disease known as "Red Stele." A number of new varieties have been reported to show considerable resistance to this disease. The most desirable of these varieties for Missouri conditions must be determined.

In northern Missouri varieties with more size and firmness are needed to replace the Dunlap and Premier which are the leading varieties for home use and local markets.

Numerous varieties are being developed by State Experiment Stations and the U. S. Department of Agriculture. Most of these varieties will be inferior to our present varieties when grown under our conditions, but a few of them may be superior and may possess the qualities needed for today's demands.

It was the object of this study to compare the performance of newly introduced varieties with those varieties most commonly grown in Missouri at present.

Methods

Varietal trials were established at Columbia in 1950 at the Midway Experiment Farm on virgin soil of the Seymour Silt loam type. Organic matter and nutrient element content of this soil is relatively high, consequently no fertilizer was applied.

Varieties were tested in 50-foot single row plots. Seventeen plants were set in each plot. Three replicated randomized plots were used for each variety. Plots were cultivated and hoed as needed. All blossoms were removed during the first year to foster early runner production. Weather conditions in 1950 were favorable for runner production. The width of the matted row was restricted to 24 inches by cultivation. It was necessary to cut off excess runners on some varieties with a rotary type of cultivator but no attempt was made to thin plants in the row.

All plots were mulched with wheat straw in late November before temperature dropped below 20°F. The mulch was removed on April 14 as new growth was beginning.

Rainfall was a limiting factor and no irrigation was carried out. During the 15 days prior to the first picking (May 13-28)

0.56 inches of rain fell and during the first 10 days of the harvest only light showers totaling .65 inches occurred.

Results

All varieties tended to bloom at the same time due to unfavorable weather conditions. The first picking was made May 28. Blakemore, Maytime, Midland, Premier and Suwanee yielded a heavy picking; Tennessee Shipper, Temple, Fairpeake and Tennessee Beauty lesser amounts; and Armore and Aroma very little—not enough to warrant a commercial picking.

The picking season was short due to insufficient moisture. The last picking for Blakemore, Fairpeake, Maytime, Midland, Premier, Suwanee, Tennessee Shipper and Tennessee Beauty was made June 8; for Aroma and Temple, June 11; and for Armore, June 13. Not all the fruit was picked but after these dates, there was not enough No. 1 fruit to pay a commercial grower to pick it.

Yields of plots are shown in Table 1. Plant stand was an important factor in determining yields. Armore, Aroma, Blakemore and Temple were prolific runner makers producing a well filled matted row 18 to 24 inches in width. Premier, Suwanee, Maytime, Tennessee Beauty, Midland and Tennessee Shipper did not produce

TABLE 1--YIELD OF ELEVEN VARIETIES OF STRAWBERRIES

Variety	Plot No.			Average Per Plot-Quarts	Crates Per Acre
	1	2	3		
Armore	33.0	26.1	26.0	28.4	257
Blakemore	31.5	22.9	25.0	26.5	240
Temple	20.5	20.2	20.5	20.4	185
Premier	12.6	18.9	14.3	15.3	138
Aroma	15.3	14.5	12.8	14.2	128
Tennessee Beauty	11.3	5.7	13.2	10.1	91
Suwanee	8.5	11.3	9.7	9.8	89
Maytime	12.0	6.4	6.4	8.3	75
Midland	6.6	9.2	9.0	8.3	75
Tennessee Shipper	6.9	10.9	5.8	7.9	71
Fairpeake	1.8	1.5	3.4	2.3	19

well-filled rows in all cases. Fairpeake mother plants produced very few runners. It was observed at setting that most of the plants of this variety had several branch crowns.

A comparison of average berry size is given in Table 2.

Discussion

A number of years are required to properly evaluate a variety. A variety should not be discarded because it has performed poorly one season, nor should a variety be recommended because it has performed well for one season. It should be pointed out, however, that the presently recommended varieties Armore, Aroma, Blake-

TABLE 2--COMPARISON OF AVERAGE BERRY SIZE OF DIFFERENT VARIETIES AT THIRD PICKING.

Variety	Average No. of Berries Per Qt. Box	Variety	Average No. of Berries Per Qt. Box
Armore	52	Premier	68
Aroma	60	Suwanee	92
Blakemore	62	Tennessee Beauty	60
Fairpeake	69	Tennessee Shipper	78
Maytime	65	Temple	60
Midland	57		

NOTES ON VARIETIES

Variety	Shape	Size	Color	Flavor	Texture
Armore	Blunt wedge, rough	Large	Medium dark	Mild, good	Firm, very good appearance after 24 hours
Aroma	Blunt wedge	Medium large	Light red	Fair, subacid	Firm, very good appearance after 24 hours
Blakemore	Round to square pointed	Medium	Light red	Very acid	Firm, good appearance after 24 hours
Fairpeake	Round to square pointed	Small to medium	Medium dark glossy	Good, moderately acid	Firm, fair appearance after 24 hours
Maytime	Long round pointed ridged	Medium	Dark Red	Fair to good	Medium firm, fair appearance after 24 hours
Midland	Variable, rough	Very large, variable	Dark Red	Excellent	Firm, fair appearance after 24 hours
Premier	Round pointed to wedge	Medium	Medium dark	Good	Soft, poor appearance after 24 hours
Suwanee	Round, pointed necked	Small	Medium dark	Good	Soft, poor appearance after 24 hours
Tennessee Beauty	Long, sharp pointed, necked	Medium large	Dark red, green point	Fair, very acid	Firm, good appearance after 24 hours
Tennessee Shipper	Round, pointed necked	Small to medium	Light red	Poor, very acid	Firm, fair appearance after 24 hours
Temple	Round to wedge, blunt, uniform	Medium	Very dark	Excellent	Firm, dark color may detract from appearance after standing

more, Temple and Premier were the leading varieties in these trials.

On newly cleared timber lands Aroma is still one of the better varieties for shipping. Blakemore still appears to be our best variety for freezing and preserving. Temple appears to be our best variety for Red Stele infested soils. Armore has led in yields in northwest, central and southwest Missouri. In shipping tests it has compared favorably with Aroma. This variety has good appearance and quality, therefore it should be desirable for both the local market and home garden. It produces a berry which freezes well comparing favorably with Blakemore, however, as a commercial freezing variety its somewhat identical calyx may be a disadvantage. Another shortcoming of this variety is its susceptibility to Leaf Spot, (*Mycosphaerella fragariae*).