



PERFORMANCE OF

# **STRAWBERRY** *varieties*

IN MISSOURI

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Since the last publication of results of strawberry variety trials made by the Missouri Agricultural Experiment Station (Bul. 576, 1952,) a number of new varieties have been introduced, some of which may seriously challenge the position of presently recommended varieties. Furthermore, the introduction of virus-free stocks of the older varieties necessitates the re-evaluation of these varieties.

The great number of varieties listed in catalogs, (sometimes 3 to 4 dozen,) with the introduction of several new ones annually, forms a confusing picture. Frequently a new variety is tried, only to be a severe disappointment to the grower, for only a few of the large number of available varieties are well adapted to Missouri conditions and needs.

Several factors play a role in determining the adaptation and consequently the yield of a given variety. Some of the more important are: (1) response to daylength, (2) temperature requirements, (3) soil adaptation.

In evaluating a variety, primary emphasis must be placed on yield. However, berry size, firmness, dessert quality, freezing quality, shipping quality, uniformity, external and internal color, disease resistance and many other characteristics must be considered.

A number of the newer varieties that might possibly be adapted to Missouri are compared herein with presently recommended varieties.

### ***Trial Methods***

Varietal trials were conducted in 1952, 1953 and 1954 without supplemental irrigation and under conditions of extreme drouth and temperatures. Due to the sparse and erratic stand of plants, reliable yield data could not be obtained. It was possible to make comparisons of virus-free and regular stocks of eight varieties in the 1954 planting, however.

A planting consisting of 21 standard and new varieties was established in the spring of 1955 on the Horticulture Farm near New

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*in Missouri*

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Franklin. Each variety was represented by a fifty foot row randomized in each of four replicate blocks.

Before planting, the soil (Memphis silt loam) was limed and rock phosphate added at the rate of 1000 pounds per acre. Five hundred pounds of 12-12-12 fertilizer were also added. The plants were set 3 feet apart in rows 4 feet apart. The matted row system was used. The planting was irrigated as need was indicated by soil moisture blocks.

## Trial Results

The value of virus-free stocks was demonstrated by increased plant vigor, runner production and yields in the planting made in 1954. Yield comparisons between different varieties, however, were of doubtful value due to the erratic stand of plants.

For the 1955 planting, picking commenced on May 25 and the last harvest was made on June 11. The last variety to begin bearing was

Ambrosia, on June 1. Armore, Fairfax, Empire, Mo. 154, and Robinson were first picked on May 28, with the remainder being ready for harvest on May 25. The total yield of the four plots of each variety was computed on a yield per acre basis.

The results of the trials may be seen in the following table in which the varieties are arranged in order of their yield. The number of berries per quart at the third picking is indicated and certain berry characteristics have been rated.

## Performance of Strawberry Varieties --- 1956

Ratings: 1-Unacceptable 2-Inferior 3-Average 4-Excellent 5-Superior

| Variety      | Yield<br>(cr./a.) | Berries/qt.<br>(3rd. picking) | Firmness | Flavor | Uniformity | Internal<br>Color |
|--------------|-------------------|-------------------------------|----------|--------|------------|-------------------|
| Dunlap       | 575               | 87                            | 2        | 2      | 3          | 3                 |
| Sparkle      | 298               | 75                            | 4        | 3      | 4          | 4                 |
| Premier      | 263               | 84                            | 2        | 3      | 3          | 3                 |
| Tenn. Beauty | 252               | 83                            | 4        | 3      | 4          | 4                 |
| Dixieland    | 243               | 79                            | 4        | 3      | 4          | 3                 |
| Armore       | 242               | 64                            | 3        | 4      | 3          | 3                 |
| Robinson     | 230               | 60                            | 3        | 3      | 3          | 4                 |
| Blakemore    | 224               | 112                           | 4        | 3      | 4          | 4                 |
| Pocahontas   | 201               | 75                            | 4        | 3      | 4          | 3                 |
| Vermillion   | 195               | 74                            | 3        | 4      | 4          | 3                 |
| Missouri 154 | 175               | 121                           | 2        | 4      | 3          | 3                 |
| Belmar       | 154               | 102                           | 3        | 3      | 3          | 3                 |
| Midland      | 141               | 83                            | 3        | 4      | 4          | 4                 |
| Empire       | 124               | 79                            | 3        | 3      | 4          | 3                 |
| Fairfax      | 110               | 67                            | 4        | 5      | 3          | 3                 |
| Starkrimson  | 110               | 59                            | 5        | 3      | 4          | 5                 |
| Stelemaster  | 103               | 130                           | 4        | 3      | 5          | 3                 |
| Big Joe      | 103               | 72                            | 2        | 3      | 3          | 3                 |
| Ambrosia     | 74                | 69                            | 2        | 2      | 1          | 2                 |
| Fairpeake    | 67                | 75                            | 5        | 5      | 4          | 3                 |
| Albritton    | 61                | 84                            | 4        | 3      | 4          | 4                 |



The Armore strawberry, the Missouri Agricultural Experiment Station's most recent introduction, is becoming an important commercial variety in Missouri and several other states.

## Variety Comparisons

The outstanding yield of **Dunlap** is due in large part to its prolific production of runners and general vigor. A marked improvement in the performance of this variety has been noted with the introduction of virus-free stocks. However, the softness of the berry limits this variety to home production and local sales.

**Sparkle, Premier and Tennessee Beauty** are varieties which have also shown a great improvement in performance since the introduction of virus-free stocks. Premier, like Dunlap, must be limited to home and local market production due to the softness of the fruit. Sparkle and Tennessee Beauty are excellent fresh market varieties due to their attractive appearance and firmness, and are satisfactory for processing.

**Dixieland and Pocahontas** are recently introduced varieties that show considerable promise for Missouri. Dixieland is an excellent contender for Blakemore's position, producing an attractive firm pack for the fresh market as well as an excellent frozen product. Berry size is maintained well through the harvest season which is a distinct advantage over the Blakemore. Pocahontas with its attractive, firm and large berry should demand premium prices on the fresh market. Both Dixieland and Pocahontas appear to produce well throughout Missouri.

**Armore** has been one of the higher yielding varieties and has usually been the highest producer in our trials. This variety is medium-late with a long fruiting season. It is excellent for home production and local markets. Its dessert quality is above average and it freezes satisfactorily. Susceptibility to leaf diseases and mildew and a tendency toward softness and decay in cool rainy seasons are its serious shortcomings. A captan spray program is highly advisable.

**Robinson** is one of the higher yielding varieties with exceptionally large berry size. However, its softness and tendency to decay detracts greatly from its commercial value.

**Empire** is an attractive variety of the Premier type and for Premier territory, but yields have been disappointing in our tests.

**Bellmar**, a variety used for local sales in the Kansas City and St. Louis areas, was only mediocre in yield and exhibited no outstanding berry characteristics.

**Fairfax, Fairpeake, Midland and Mo. 154** are outstanding for their flavor. These varieties are possible choices for home production or local sales at premium prices.

**Starkrimson** was possibly the most attractive variety with large firm dark red fruit. It has possibilities as a variety for a select trade. Highest yields are obtained on highly fertile soils.

**Sparkle and Vermillion** are resistant to one race of the Red Stele root-rot organism (*Phytophthora fragariae*) and should be grown on soils known to be infested with this organism. **Stelemaster** carries resistance to three races of this disease and may thrive where Sparkle or Vermillion will not succeed. Fortunately, Red Stele has been positively identified in only a few instances in this state and at present Red Stele resistance need not be the primary consideration in selecting a variety.

**Albritton, Ambrosia and Big Joe** appear to have no place in commercial or home production in Missouri. Ambrosia is reportedly a very late variety but its fruiting season appears to be short and consequently its production will terminate before that of the Armore.