

## THE SMALL FRUIT VARIETY QUESTION IN ILLINOIS

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There is an increasing interest in small fruit culture in Illinois from the standpoint of the commercial grower, the home gardener, and the plant breeder. During the past few years, Illinois-grown red raspberries and strawberries have been commercially profitable where attention was given their culture. Many home owners are turning to the small fruits as a source of healthful and appetizing food easily and quickly provided on a small piece of ground, but hesitate to plant, not being familiar with the varieties best likely to succeed.

Although small fruits are rich in varieties (during the past century nearly 2,000 strawberries having been named and introduced, with a corresponding large number of the other small fruits), many have been short-lived because they were either unproductive or unable to stand the environmental conditions.

Although small fruit breeding offers a fertile field for the plant breeder in developing better varieties, much of the most careful work has been done since 1900, most horticulturists being content to take the best that they found in the wild and propagate from it. Notable exceptions in Illinois horticulture include the late Reverend J. R. Reasoner, who will always be honored as the originator of the Dunlap and Burrill strawberries, and the late E. A. Riehl, whose Eclipse and Delicious grapes are recognized as having high quality.

Projects are now well under way by the U. S. Department of Agriculture, State Experiment Stations, nurserymen, and private individuals looking toward the improvement of old, and the origin of new varieties of gooseberries, raspberries, strawberries, grapes, and other small fruits. Worth while new varieties bear more and better fruits. The plants have greater vigor and more resistance to disease and to unfavorable weather conditions.

Among the projects in pomology at the Illinois Experiment Station, mention should be made of those which have to do with gooseberry and raspberry breeding and the testing of the old and new small fruit varieties in the trade. In the small fruit breeding work a search is being made for a gooseberry which bears larger and better fruits on canes comparatively free from spines and with foliage more resistant to leaf diseases. More than 80 varieties of American and European gooseberries have been selfed and crossed at blossoming time in the variety plantation at the Station. Plants are being grown from the seed secured and detailed studies are being made of their horticultural and botanical characters. Some of the best individuals are being back crossed with the parents. This work was begun in 1924 and at this time over 4,000 seedlings are under test, including several hundred of the second and third generation. A number of promising individuals have been found among the thousands of plants now coming into bearing. Columbus x Carrie and Poorman x Transparent progenies are very promising as to fruit and plant characteristics. Glenn-dale and Carrie, among others, when selfed, gave a number of seedlings with better plant or fruit characteristics than the parents.

Raspberry breeding work was begun at the Station in 1922. There are now growing more than 7,000 individuals including second and third generation selfs and crosses. Search is being made for more hardy, disease resistant, and productive raspberry varieties and considerable material is also available for study of the inheritance of characters.

Striking differences are being found in hardiness, vigor, and anthracnose resistance of the seedlings, as well as in the size, quality, and amount of fruit borne on individual bushes. In many cases where selfing was done, some of the resistant seedlings were superior to the parents in fruit or cane characters or both. Very promising selfed seedlings of Quillen, Cumberland, Plum Farmer, Honey Sweet, Gregg, Black Pearl and Munger have been found. In combinations among the blackcaps, some outstanding individuals have resulted, especially in the Honey Sweet-Plum Farmer and Munger-Honey Sweet crosses. Plum Farmer-Honey Sweet progeny do not rank so high as the reciprocal, although a few individuals were worth keeping. Occasional hybrid purples resulting from crosses made between blackcaps and reds are very promising, including several Quillen-Latham and Quillen-June. These striking diversities shown between varieties and seedlings are thought to be good evidence of physiological individuality, which is inherited. Further tests are under way to determine the value of the potential new varieties.

A number of small fruit varieties, most of them available for general planting, have been tested for a period of years at the Station and may be recommended. In one group may be listed those probably chance seedlings whose value was appreciated by some interested plant lover and sent out to the trade through nurserymen. This list includes the Plum Farmer, Cumberland, and Quillen black raspberries, the Royal Purple raspberry, the Eldorado blackberry, and the White Grape current. Plum Farmer and Cumberland are now losing in popularity because of susceptibility to anthracnose, requiring careful spraying for its control.

The second group of varieties has resulted from the efforts of plant breeders interested in originating new varieties for a particular purpose. Some of the outstanding introductions in this group found adapted to Illinois conditions are the Dunlap, Burrill, Howard 17 (Premier) and Aroma strawberries; the Wilder current; the Poorman gooseberry; and the Agawam (red), Concord (black), Niagara (green), and Brighton (red) grapes. The Premier strawberry is rapidly supplanting other varieties because of its productiveness. It is a better shipper but not so high in quality as Dunlap or Burrill. Agawam and Niagara are doubtfully hardy in northern Illinois. Poorman is rather slow in coming into full bearing and is not so productive as some older sorts but the fruit is large and of high quality.

A considerable number of small fruit seedlings from other experiment stations, some of which have been named recently, are being tested at the Illinois Station to determine their merit in this state. It is too soon to judge the value of the most recently obtained material. Some of the varieties in this group which have demonstrated fitness for Illinois planting include the following grape varieties which originated at the New York (Geneva) Station, arranged in order of their ripening season: Ontario and Portland (green), Sheridan (black), and Urbana (red). Of these grapes, Portland bids fair to supersede other early green varieties and Sheridan promises to be more popular than Concord, due to their productiveness and the size and quality of their fruit.

In the raspberry varietal list, two reds from the Minnesota Station, the Latham and the Chief are rapidly becoming the most popular in this section of the country. They are superior in productiveness to Cuthbert

and King, older standard sorts. The ripening season of Chief begins about a week before that of Latham. The Ulster, a new red seedling from the Geneva Station, is very promising.

Among the new strawberries, the Blakemore, Bellmar, and Redheart varieties, early to midseason, originated by the U. S. Department of Agriculture and now available from cooperating nurserymen, promise to supersede some of the older varieties for home and market. The plants are vigorous and productive. Blakemore is recommended for canning and preserving. Bellmar and Redheart rank high in dessert quality.