

New Seedless Table Grapes

Perlette and Delight, two new early maturing varieties

H. P. Olmo

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The first new seedless varieties of a series of grapes now under test at Davis are Perlette and Delight.

Perlette is a hybrid of Scolokertek hiralynoje 26 x Sultanina marble, from a cross made in 1936. The seed was planted in the fall of 1936 and the vine first fruited in 1940.

Because the translucence of the mature fruit is its most striking feature, the French word *Perlette*, signifying "little pearl," was selected as its name.

Perlette seems to have a definite place in the variety picture because it is the earliest maturing seedless variety in existence.

The fruit is unique in that its beauty surpasses other early varieties, and the appearance of delicacy is maintained for a considerable period after harvest. This is in contrast to other varieties such as the Pearl of Csaba and Chasselas doré which quickly deteriorate in appearance and quality.

Delight is a sister seedling of Perlette. The cross was made in 1936 and the vine first fruited in 1940.

This variety was marked for observation from the first season of fruiting because of its early maturity and the characteristic Muscatlike flavor inherited from its Hungarian parent.

Productivity

Delight is less vigorous than either Perlette or Thompson Seedless, although to date its capacity for production is not significantly different from that of Thompson Seedless in the same plot. Perlette has remained very vigorous, despite a heavy annual yield during the past three seasons.

Perlette is a very productive variety, yielding about twice as much as the Thompson.

The range in yield for the experimental vines in the fifth bearing year—1947—was from 44.7 to 83.3 pounds per vine. The yield of the Thompson Seedless plot, used for comparison, was undoubtedly smaller than if the standard cane pruning had been employed instead of the cordon short-spur system.

Delight is less fruitful than Perlette, but the average yields at Davis for the

four-year period are not significantly different from those of Thompson Seedless.

Since the cordon system of pruning has the advantage of producing better fruit quality and being more economical, these new varieties are superior in this respect. Cane-pruning of Perlette and Delight appears neither necessary nor desirable.

Both Perlette and Delight have consistently produced larger berries than Thompson Seedless. Perlette is about one third larger by weight; Delight, about one tenth larger.

The rudimentary seed development in both varieties is similar to Thompson Seedless. Girdling of the canes or trunks to increase berry size has given percentage increases comparable with the Thompson. Some growers believe Perlette would yield a berry of the same size as girdled Thompson Seedless if properly berry-thinned without girdling.

Early Maturing

Both new varieties mature earlier than Thompson Seedless. This should be of distinct advantage in those districts producing table fruit for early shipment, such as the Coachella and Imperial valleys of California and the Salt River Valley of Arizona. In the cooler coastal areas, such as Napa and Oakville, Thompson Seedless does not reach maturity and the berries remain very small. In these same areas, both Perlette and Delight produce fruit of good quality and of normal berry size.

At Davis, selected clusters of Perlette have been palatable about August 1, those of Delight about August 6, and those of Thompson Seedless about August 18. Perlette ripens earliest and is mature and palatable at a very low sugar content, a characteristic of many varieties that ripen very early. Clusters of 13 Balling or above were palatable in the 1946 season, while Thompson Seedless at the same Balling and harvested on the same date was hard, inedible and had over double the acidity.

At 18 Balling Perlette is actually over-ripe, and even though left on the vine for a prolonged period, the sugar concentration remains low.

The palatability of even the best fruit is definitely inferior to the mature Thomp-

son Seedless; therefore, Perlette could not well compete with Thompson Seedless as table fruit if both were available at the same season. In taste, Perlette has usually been scored as neutral, but some samplers distinguish a mild flavor that is characteristic of its Hungarian parent.

At Davis, Delight matures from 12 to 14 days in advance of Thompson Seedless. The low acidity of Delight is one factor that enables it to reach a palatable stage sooner than Thompson Seedless.

Unlike Perlette, the fruit sweetens almost as well as Thompson Seedless, in fact, at prime maturity many people prefer it to the Thompson. At Davis, the fruit loses palatability when the acidity goes below 0.5 and when overripe there is a tendency toward astringency.

At prime maturity, Delight has a mild Muscat flavor, but unfortunately this is extremely variable even between clusters on the same vine. Nevertheless, the flavor is preferred by the majority of tasters to that of the more neutral Thompson Seedless.

Value as Raisins Doubtful

Perlette perhaps cannot be profitable for raisins because of its overly compact clusters. In some seasons this condition may rupture the berries in the interior of the cluster and cause considerable loss from black mold. Raisin samples judged by an impartial jury indicate that the raisins of Perlette closely resemble those of Seedless Sultana and would be classed in this category. The raisins lack meatiness and are low in sugar content.

Raisin tests of Delight were conducted at Davis for three seasons with the products judged by number. For comparison Thompson Seedless was included as a numbered sample. Delight was rated superior or equal to Thompson Seedless. None of the five judges was able to detect the new variety but accepted it as a selected sample of Thompson Seedless.

Both new varieties, on the basis of small-lot tests, appear to be better adapted for shipping and handling as table fruit than Thompson Seedless.

Delight has a much firmer and more resistant berry with practically no shat-

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California Blackeye 5

state's third most important dry bean being improved for wilt resistance

Francis L. Smith

The **blackeye** variety of cowpeas is classed as a dry bean in California but in the southern states it is known as the Blackeye pea.

As a bean variety in California it is the third most important following the small and large lima beans.

The annual production in California from 1929 to 1947 varied from 275,000 bags in 1932 to 1,154,000 in 1940. The average for the 18-year period was 621,800 bags.

The average production of cowpeas per acre in the United States is 5.4 bushels while the California average for the Blackeye variety is about 20 bushels.

The California crop is largely sold in the southern states as dry edible beans, and some are used for seed.

In the latter part of the nineteen-twenties large areas of rather light sandy soil in the San Joaquin Valley were becoming unfit to produce Blackeye beans because of infestation with nematodes and the cowpea wilt.

A breeding program was started to add resistance to these two diseases. For the resistant parent the Iron variety was chosen. It is highly resistant to both these widely diverse organisms. The California Blackeye was used as the recurrent parent in a backcross breeding program.

Eventually the Blackeye 5 most nearly duplicated in growth habit and maturity the old California Blackeye. Because of its superiority in seed size and smoothness and whiteness of the seed coat; its erect, bushy habit, high potential yielding ability, and ease of threshing, it soon spread throughout all the Blackeye growing areas in the state regardless of whether disease resistance was or was not a factor.

It is doubtful if the old Blackeye can be found at the present time anywhere in the state. As the Blackeye 5 increased in acreage in California more seed of this variety was shipped to the southern states for dry beans as well as for seed. Most of the Blackeye planted anywhere in the south from California seed is now Blackeye 5.

Cowpea Wilt

In recent years the cowpea wilt has made great inroads in the destruction of stands of even Blackeye 5. This may be

due to the fact that the resistance of this line was not high, and with heavier attack it has broken down to almost susceptibility; or the wilt organism itself may have changed through known biological processes to produce strains to which the Blackeye 5 is susceptible.

At the present time, which one of the alternatives is true has not been answered by critical experiments.

It is apparent, however, in experimental plots that the Blackeye 5 still has more resistance than the old Blackeye. However Blackeye 5 in the Modesto-Turlock area of the San Joaquin Valley is not resistant enough to wilt to allow planting on wilt sick soil without incurring considerable loss.

Some other strains of Blackeye which have greater wilt resistance are now coming into the Modesto-Turlock area. One has been tested for three years and is being increased for commercial production in 1949. It is a selection known as Blackeye 7. Although it is somewhat later and more viney than Blackeye 5, its higher resistance has made it attractive to many growers.

In those areas where wilt is not so devastating, the Blackeye 5 is still the dominant strain. A number of the early releases are still grown by a few people. In the Chino area, for example, a strain is grown which local growers call Chino 3. In all the tests made, it has been found to be indistinguishable from Blackeye 5.

In order to keep the Blackeye 5 variety pure, a number of seed producer-growers handle certified seed. In 1947 there were 58 growers producing 2,861 acres of certified seed of this variety. These growers are spread well over the state as indicated by their locations by counties: Stanislaus 34, San Joaquin 7, Madera 3, Sutter 3, and one each in Tulare, Merced, Kern, Ventura, Los Angeles and Riverside.

Breeding for Resistance

Breeding experiments are underway to increase the resistance of Blackeye 5 by crossing it to the Iron variety. In the new breeding program, now in its second year, considerable emphasis will be made to reclaim a type which is as near like Blackeye 5 as possible with more resistance to wilt added to it.

The nematode resistance of Blackeye 5

is apparently on a par with any of the other Blackeye hybrids.

The breeding program is bound to take time and southern growers should use Blackeye 5 unless their soil is wilt sick. In that case the next best thing is to switch to the new Blackeye 7 variety.

Since Blackeye 5 still does fairly well under light infestation of wilt, it will probably hold up until a new more resistant type can be bred.

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tering. The fruit holds for a long time, either on the vine or in storage.

Perlette does not show the brown discoloration after handling so characteristic of very early varieties. No large-scale shipping tests of either variety have yet been made to eastern markets.

Thompson Seedless is being used to an increasing extent for canned fruit salad and fruit cocktail mix. Cannerymen have had poor results with the variety largely because the stems do not come off the berries easily. The berries split and do not retain a good color during processing. Both Perlette and Delight have been consistently superior to Thompson Seedless in canning tests conducted in 1946 and 1947 with three commercial canneries.

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WALNUTS

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wettable powder per 100 gallons of water should be considered.

Time of treatment will depend on the development of both walnuts and the codling moth. In normal instances, the first application in most localities should be made before May 10, and the second, before June 1.

There is insufficient evidence of the certainty of a high degree of codling moth control from DDT dust treatments. Also, the drift of dust—at the time of application—from the orchard onto the adjoining vegetation may have serious consequences.

Until further information is available on these important points, it is not believed that growers should consider use of DDT dust on walnuts.

Use of lead arsenate rather than DDT during 1948 will avoid risks of aphid and two-spotted mite build-up, which is attendant with DDT applications.

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