

The French Hybrid Grapes

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In the past several years a relatively "new" class of grape varieties has come to the attention of fruit growers and gardeners. This "new" class of grape varieties owes its origin to the plant breeders of France, who, by their persistent and diligent efforts, have created a new race of grapes with many distinctive characters not found elsewhere in the grape family. In their country of origin, France, these grape varieties are known collectively as *les hybrides producteurs directes* (the hybrid direct producers), but in North America they are known as the French hybrids to differentiate them from the American hybrid or bunch grape varieties so widely grown in eastern North America.

Because the French hybrids are new to the gardeners and fruit growers of this country and because most of these grape varieties have been grown for only a few years even in the test plantings of Experiment Station vineyards, it is believed that a bit of information on their origin and the most promising varieties for this country would be helpful to those who may wish to grow some of these grape varieties. The great majority of these varieties have been grown in North America only since the end of World War II and a very few of the older varieties have been grown in Experiment Station vineyards since around 1904. Aside from these few earlier varieties less than a decade has passed in time to evaluate their behavior and adaptability to our climatic conditions. This period of time is probably of too short duration for an adequate test under all of the varied conditions encountered, but it has served to indicate that some of these varieties are promising and worthy of wider testing. Fewer still are the promising varieties which appear to have distinctive commercial possibilities, but this in itself should cause no concern for the amateur horticulturist, the

gardener or the plantsman who wishes to explore some of the surprises that the world of grapes has to offer for his or her pleasure and enjoyment.

History and Origin

To understand why the French hybrids came into existence and the background for their development in France, one has to go back to the blackest days in French viticulture when the scourge of phylloxera, downy mildew, oidium (powdery mildew) and black rot were plaguing the French vineyardists and threatening to exterminate vine growing in France, then as now, the greatest grape-growing country in the world. Phylloxera, caused by a tiny root louse, *Phylloxera vastatrix*, attacked the root system of the highly susceptible French vinifera varieties and by their puncturing of the root cells to suck out the plant juices progressively caused the decline in growth and vigor until death of the plant resulted. This minute insect pest and the damage it caused was sufficient in itself to ruin the vineyards except in certain areas unfavorable to its attack—but to add to the misery and despair of the growers came still other pests to attack the above-ground portions of the vine.

Downy mildew caused the complete loss of the blossom clusters and fruit, depending upon the season of infection. The leaves were destroyed by this fungus which produced spores by the millions for fresh infections until the vines stood bare long before autumn frost. Oidium or powdery mildew caused cracking of the berries so that they shrivelled and rotted, while black rot destroyed the fruit and blossom clusters leaving for the vineyardist nothing but rotted berries and shrivelled mummies.

All of these pests came originally from North America, probably upon wild or cultivated American grape varieties that had been imported to Europe at different

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times by botanists, plant collectors and other students of plants.

The whole situation appeared hopeless as nothing was known about these pests beyond their botanical or entomological classification in the case of phylloxera. Quite by accident, Millardet, one of the greatest French viticulturists and scientists, observed that vines along a roadside, sprayed and smeared with an evil-appearing mixture of copper sulphate and lime by a vineyardist to discourage passersby from eating the fruit, were remarkably free of downy mildew despite severe damage to the unsprayed vines. Here, then, was a preventive treatment for downy mildew, the worst of the introduced fungus diseases. Powdery mildew yielded to dusting with sulphur and black rot yielded to the evil-appearing mixture of copper sulphate and lime discovered by Millardet. Today we are all familiar with this mixture, the universally known Bordeaux mixture, named after the region near Bordeaux, France, where Millardet first made that historic discovery.

Other observant viticulturists in France noticed that some of the wild American grape species and a few of the cultivated American varieties either suffered no visible damage from phylloxera or resisted its action for longer periods of time than the susceptible vinifera varieties, and thus the first clue to combatting phylloxera appeared. By grafting the French varieties on the roots of the resistant American vines, the damage caused by phylloxera was averted and the French vineyards were rapidly reconstituted on resistant root stocks.

All of this was well and good and the world owes France a great deal for solving a series of problems that were of great economic importance, but all of these sprays and grafting techniques added to the cost of growing grapes. Other French viticulturists, thinking ahead of the present, looked about for an answer to these problems that would not require the great amount of money, labor, and equipment

needed to spray and graft grapes. The answer lay in the ways and laws of Nature. For thousands of years the wild grapes of North America were hosts to their parasites, these various fungus diseases and the root louse, phylloxera. Throughout this long period of evolution, those grape vines which resisted their attackers survived and in turn begot offspring which were subjected to this same vigorous selection of the fit and the rejection and subsequent death of the unfit—the susceptible types. The vinifera varieties, on the other hand, had evolved in Europe and southwestern Asia without this selection for resistance because these diseases and phylloxera were not present in the Old World until introduced into Europe in the nineteenth century by Europeans.

At first the French viticulturists imported all of the cultivated American grape varieties in the hope that some of these would be satisfactory for table and wine production, but it became apparent after a few years that none of these was equal to the French vinifera varieties in the qualities desired. Furthermore, the majority of these American varieties were either selections of *Vitis labrusca* or hybrids between *V. labrusca* and *V. vinifera*. Unfortunately, *V. labrusca* was native to a portion of North America where the climate and particularly the soil were unfavorable for phylloxera and consequently this grape species was only slightly better in resistance to the insect than *V. vinifera*. Combining species of little or no resistance to this insect produced offspring of comparable resistance and, when grown in areas favorable to phylloxera such as central and southern France, the vines quickly died or became sickly and unthrifty. The resistance of *V. labrusca* to fungus diseases varied from very poor to fairly good and, when combined with *V. vinifera*, gave offspring that were intermediate in resistance, that is, a little better than the susceptible vinifera parent but less resistant than the labrusca parent. In addition, the “foxy” flavor of the labrusca ancestor produced a wine that was highly disagreeable to European

palates. Likewise, the tough, pulpy flesh and "foxy" flavor of the fresh fruit was a very poor substitute for the fine, crisp, tender flesh of the vinifera table varieties with their refined, delicate flavors. The labrusca varieties and their hybrids possessed size of berry, lacked resistance to phylloxera and fungus diseases, but were especially deficient in quality.

There existed many other wild American grape species which did have very high resistance to phylloxera and the fungus diseases, did not possess the extremely disagreeable "foxy" taste and aroma, but did lack the berry size of *V. labrusca* and *V. vinifera*. More important than the lack of size, however, was the superior resistance of their hybrids with vinifera as compared with the labrusca and vinifera hybrids.

The French vineyardists after careful study and testing largely abandoned the labrusca types and their hybrids and began to study the other native American grape species with intense interest. Great quantities of wild grape seeds and propagating wood were sent to France by nurseries, plant collectors, travelers and others in this country as well as by French plant collectors who came over to North America for that purpose. The major effort in this collecting activity occurred in the lower Mississippi valley, especially in Texas, Indian Territory (now Oklahoma), Missouri, Arkansas, and Illinois, because in this region more wild grape species grew in abundance and the diseases and pests of grapes were most prevalent and destructive in North America. A wide difference in soil types and extremes of climate further insured the greatest possible diversity of forms within the various species for study and testing.

While it is true that the primary reason for collecting wild American grape species was to discover forms better adapted to the soils in certain areas of France and with better affinities for the vinifera scion varieties, there also existed a considerable interest in hybridizing these wild types with the vinifera varieties to produce

producteurs directes (direct producers). This term "direct producer" is used in France to designate a variety grown on its own roots or direct in contrast with a grafted vine in which the scion or fruit-producing portion of the vine is grown on a rootstock or *porte greffe* (graft bearer).

With this background of the state of viticulture in France as it existed in the late 70's and early 80's, one can understand why Eugene Contassot and many of his countrymen were interested in American vines. In 1882 M. Contassot, an amateur viticulturist in the town of Aubenas, France, received a shipment of grape cuttings from a grape collector in Neosho, Missouri. This collector was Herman Jaeger, an amateur grape breeder and collector who searched the area of southwestern Missouri, eastern Oklahoma, northwestern Arkansas and northeastern Texas for the best specimens of wild grapes for use in his breeding experiments. Jaeger made his selections from the thousands of wild grape vines that grew in this area, took cuttings from these selections or moved the original vines to his grounds near Neosho, where he studied them for their disease resistance and other characters of horticultural value. A few of these selections he used in his breeding work, the main objective being the production of varieties derived from pure wild species which would resist the diseases so prevalent and destructive to cultivated American grape varieties in the area where he lived and worked.

In this shipment of cuttings to Contassot were two of Jaeger's best seedlings derived from his breeding work, Jaeger 70 and 72. These selections were made by Jaeger after crossing Jaeger 43, a female selection of *Vitis Lincecumii* of great health and vigor with large, attractive clusters, and a male seedling selection of Jaeger 60, a female selection of *Vitis rupestris*. The parents of Jaeger 70 and 72 were regarded by Jaeger as the best selections of these two wild species, *V. Lincecumii* and *V. rupestris*, ever found by him in his search for wild grapes.

These cuttings were grafted by Contassot on older bearing vines in his small vineyard and presently they bore fruit. Contassot was immediately impressed by the relatively large size of the fruit of Jaeger 70 and the health of the vine, so he crossed it with the vinifera varieties in his vineyard or saved the seeds from open pollinated clusters. Since Jaeger 70 was a self-sterile variety which produced no viable pollen and was thus open to pollination from the vinifera varieties in the vineyard blossoming at the same time, all the seeds produced were true hybrids. Because he lacked a suitable place to grow seedlings, he gave the seeds of Jaeger 70 to two of his friends and neighbors, Georges Couderc and Albert Seibel. From these seeds given to them by Eugene Contassot, the first French hybrids were selected from the resulting seedlings, Couderc numbers 71-03, 71-04, 71-06, 71-20, 71-60, 71-66 and the early Seibel numbers such as 1, 2, etc.

Georges Couderc, who has gained even greater fame for his breeding work with grape rootstocks and studies of phylloxera resistance, began his breeding experiments around 1878 in a garden of five hectares (approximately twelve acres). He was a tremendously energetic worker and it is estimated that he grew from 300,000 to 400,000 seedlings during an extremely active lifetime of breeding grapes! Add to this the thousands of seedlings grown by Albert Seibel in his breeding work and it will give one reason to pause in admiration and reflection for these two most prolific of the French grape hybridizers. Albert Seibel, a contemporary and student of Couderc, was a practical and intelligent vineyardist who was also interested in grape breeding, especially the production of hybrid direct producers. These two men were the great pioneers in the development of the French hybrid grapes, but still other French breeders contributed their share to this great breeding work. The names of Maurice Baco, Bertille-Seyve, Castel, Gaillard, Victor Ganzin, Humbert, Jurie, Kuhlmann, Malegue, Millardet, Oberlin, Peage, Roy-Chevrier, Rouget and others,

many of whom were contemporaries of Couderc and Seibel, are found in the earlier contributions to this work. Continuing this work on into the present time are found even yet the names of Couderc and Seibel of a later generation and other breeders such as Burdin, Galibert, Joannes-Seyve, Landot, Meynieu, Perbos, Ravat, Rudelin, Seyve-Villard, etc. Thus the future looks bright for even finer things may be expected to appear as the work goes on without end.

Characteristics

To characterize a class of grapes such as the French hybrids is not an easy task because of the variations between varieties in a given class. However, there are certain characters which serve to distinguish this class of grapes as a whole from the American hybrid or bunch grape varieties as exemplified by Concord, Niagara, and others of the most common and widely-grown varieties in eastern North America.

The most noticeable feature of the French hybrids is the lack of "foxiness" that most of the American varieties possess in varying degrees of intensity. "Foxiness," that peculiar combination of flavor and aroma which is thought to be very desirable by some people and equally disliked by others, is absent from the present-day French hybrids. In pasteurized grape juice and grape jelly, this "foxy" flavor is not held objectionable by most people, but to those who prefer grapes in the fresh state, as dessert or in the form of fermented juice, this flavor and aroma are usually very distasteful. Especially to European palates or to those who have been accustomed to the mild, refined flavors and aromas of vinifera grapes is this character noticeable. The French hybrid varieties have inherited the more refined and subtle aromas and flavors which closely approach these qualities as they are found in their European or vinifera ancestors. Indeed, the majority of the French hybrids possess very neutral flavors as a group, much like the vinifera wine-grape varieties. Intense or otherwise unusual flavors in wine

grapes are not usually desired in the fresh fruit because fermentation can change these flavors into wines of undesirable qualities. It must be emphasized that the French hybrids, with the exception of only a very few of the newest varieties, have been bred for the production of wine and it is perhaps only by chance that several of these varieties which originated prior to these latest few table varieties happen to be excellent table grapes as well.

The French hybrid varieties possess a thin, often adherent skin which is not objectionable in eating as is the tough, astringent skin of Concord. They possess a tender but firm flesh which separates from the relatively small seeds; a high percentage of soluble solids, largely composed of sugars, in the juice; a medium to high acidity. Most of the *labrusca* types and their primary hybrids have a rather tough, stringy flesh which is often astringent around the relatively large seeds. Too often many of these *labrusca* types possess relatively low percentages of sugars which deceive the untrained palate into believing that they are high in sugars, whereas in reality the apparent sweetness is accentuated by low acidity.

Many of the *labrusca* types "shell" from the cluster at maturity, that is, the berries become easily detached from the pedicels and the fruit drops from the clusters at maturity or after handling and harvesting. In this respect, the French hybrids are much better because the berries are more firmly attached and resist handling better without damage. Cluster and berry size vary considerably in the French hybrids just as they do in the American varieties, but in general the French hybrids have larger, more compound clusters and generally smaller-sized berries than the American types. There is also a tendency for the berries in the French hybrids to approach the ovate form more readily than the spherical form of Concord and others of that type.

The vegetative characters are very different from the American types and are

quite noticeable to the most casual observer. The aspect or growth type of most French hybrids is more compact with upright, erect-growing shoots. A very few, chiefly the earlier hybrids of *V. vinifera* and *V. riparia*, exhibit the trailing procumbent type of growth so common in the American hybrids. The shoots have relatively shorter internodes, larger average diameters, and smaller, more numerous leaves with sharp, pointed teeth and more distinctive margins and sinuses. Also, the young developing leaves are often quite shiny or "varnished" in appearance and in the majority of cases lack the pubescence or wooly hair of the young canes and growing tips of the American types.

One of the most interesting features found in the French hybrid varieties, and one of potential economic value, is the ability of many varieties to produce a commercial crop from secondary or tertiary buds in the event that frost or freezing has destroyed the primary bud or its developing shoot and flower clusters. In regions subject to unseasonable frosts in spring or extreme temperature changes in winter, there would be considerable value in such characters because it might mean the difference between a reduced but worthwhile crop or no crop at all. Few American varieties will produce anything beyond a few small clusterlets if the primary buds or shoots developing from these buds are destroyed.

Perhaps the most important feature of these French hybrids from the economic standpoint is their high level of resistance to downy mildew, *Plasmopara viticola*. The French breeders have incorporated mildew resistance from the wild American grape species into these hybrids to a degree that is not found in any of the American varieties to date. Not all of these hybrids have equally high mildew resistance and a few of them approach the lower mildew resistance of the American varieties, but as a class they are notable for their resistance to downy mildew. In their resistance to black rot, *Guignardia bidwellii*, the French hybrids

compare favorably with the American hybrids, that is, the level of resistance is only mediocre to poor. This is not surprising when we consider the fact that these French varieties were not selected for resistance to this fungus at all. Black rot has been a relative rarity in France for the last forty years or so, despite a beginning of almost epidemic proportions during the first few years after the introduction of the fungus into France in 1885. Resistance to powdery mildew, *Uncinula necator*, and anthracnose, *Elsinoe ampelina*, is high with a few exceptions.

The resistance of the French hybrids to Phylloxera, *Phylloxera vastatrix*, has been the subject of considerable misconception and misunderstanding in this country. Many have assumed that the hybrid direct producers, as the French hybrids are called in France, are exactly what the name indicates and are grown direct or on their own roots because of high resistance or immunity to phylloxera. Unfortunately, this is not the case because with few exceptions the resistance of these hybrids to phylloxera, when grown under soil and climatic conditions very favorable to the insect, is not great enough to be economically profitable. Under such conditions the vines will become dwarfed, decline in vigor and production or otherwise exhibit the symptoms of phylloxera injury. The term "direct producer" then is a misnomer because virtually all of these varieties are grown on suitable rootstocks in France, not only because of the phylloxera problem but because of the increased yields obtained on adapted roots.

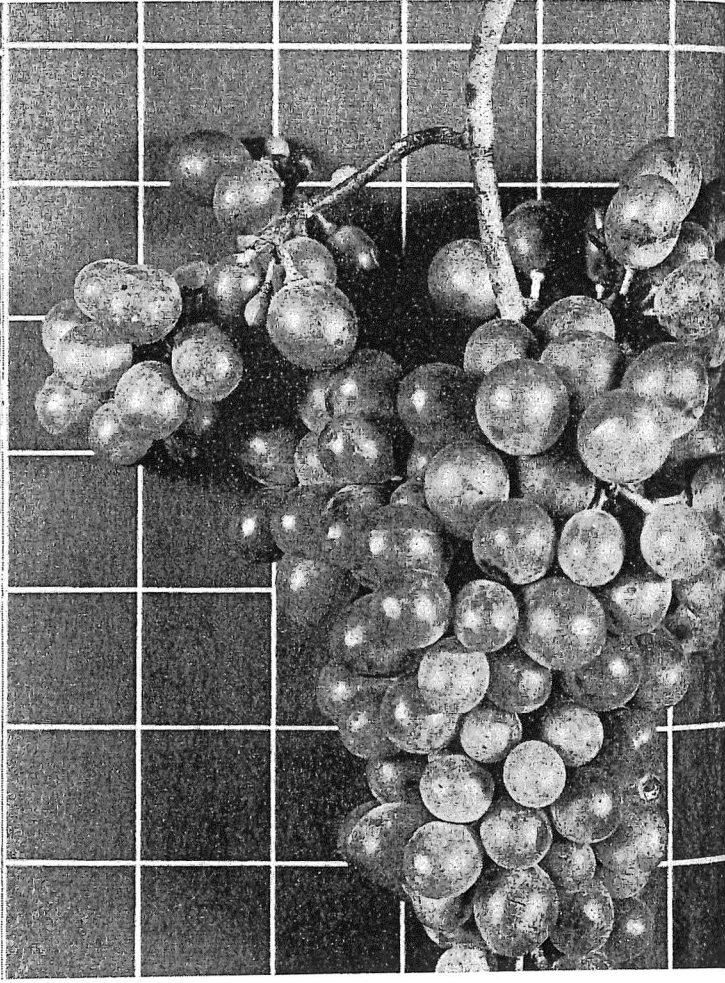
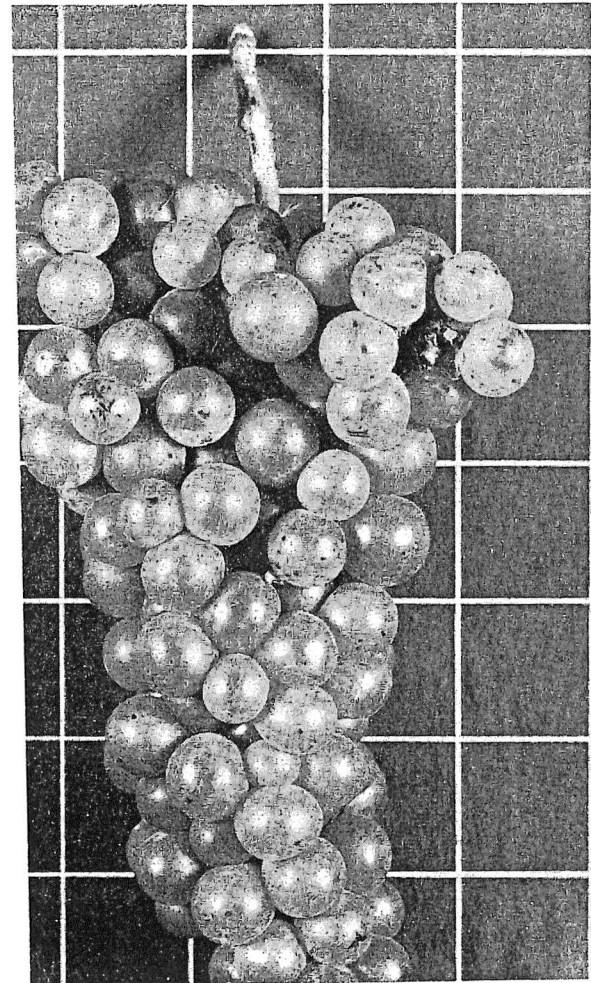
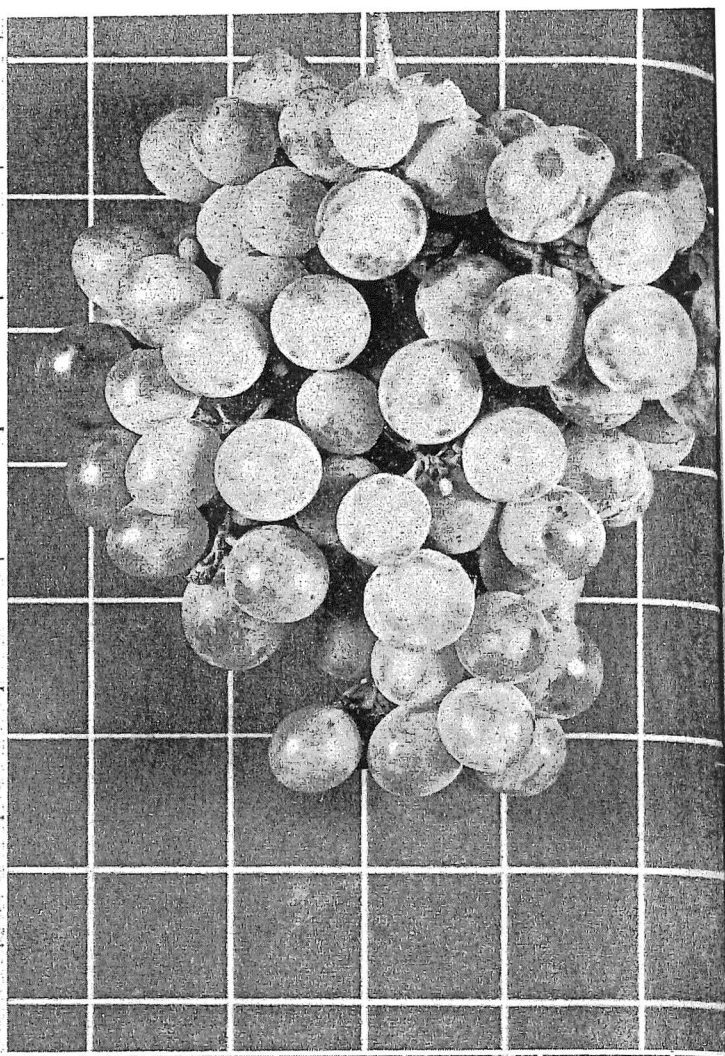
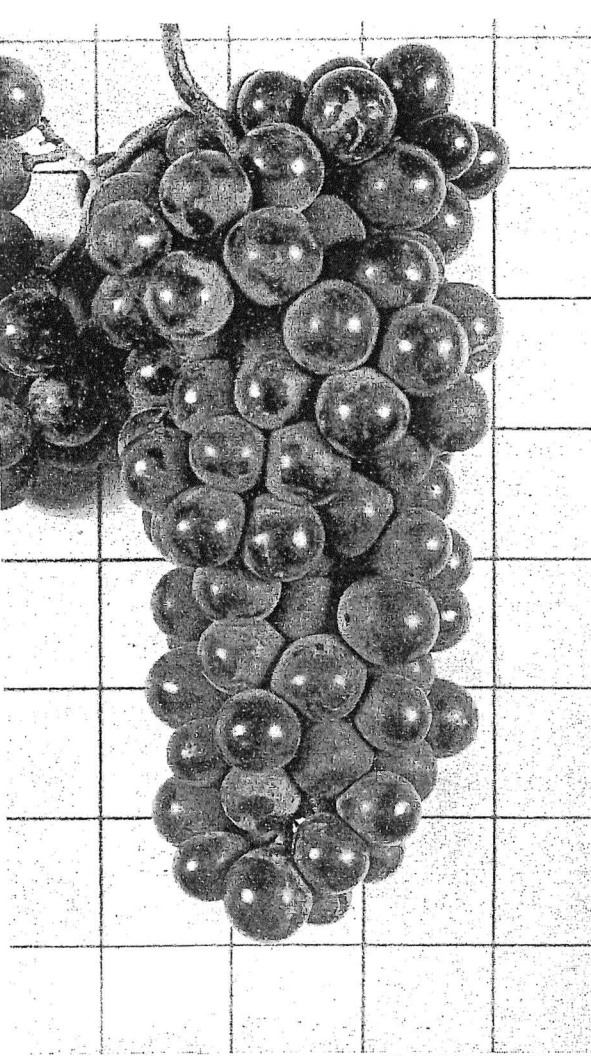
In the eastern, humid areas of North America, we have a different set of conditions and as yet not enough time or tests have been made to determine what effect phylloxera may have on these varieties here. Since grafted vines of the highly phylloxera-susceptible American varieties are somewhat of a rarity in this region, these varieties are widely grown ungrafted. It is not likely that the French hybrids with their considerably higher phylloxera resistance would experience

undue injury from the root louse wherever the American varieties thrive. The problem of evaluating phylloxera damage to American grape varieties has never been adequately investigated in eastern North America, and it has generally been assumed that our climatic conditions are relatively unfavorable to phylloxera. This appears to be largely true in the Middle West and Northeastern States, but no experimental evidence is at hand to substantiate or disprove this assumption. In the Southeastern and Gulf States and in Texas, phylloxera and other root troubles are much more serious and prevalent than farther north, and it may be prudent to investigate growing the French hybrids on adapted rootstocks in any serious plantings in such areas.

A few words on the hardiness of the French hybrids may be of interest to those who live in very cold regions with high, drying winds and relatively dry, deeply frozen soils in winter. These conditions are very difficult for any plants and, since no large-scale tests of any but a handful of the French hybrid varieties have been made in areas of extreme winter temperatures, little can be said on this subject at the present time. Here in central Illinois, where more of the French hybrid varieties have been grown for the longest period of time, most of them are hardy but a number of them are not. The average winter in this latitude can reasonably expect -10° or -15° Fahrenheit with a minimum of -19° Fahrenheit experienced since the test planting was begun. A few varieties have been hardy in South Dakota, northwestern Iowa and southern Minnesota without winter protection. Several otherwise promising varieties have experienced some winter injury here after severe winters and it would be wise for prospective growers to proceed with caution before investing any large sums of money on varieties of doubtful hardiness, especially in areas of climatic conditions similar to central Illinois and northward.

Suggested Varieties

The varieties of the French hybrids are very numerous. No accurate tabulation



or listing of all of them has ever been made, and we can only surmise that out of the hundreds of thousands of seedlings produced from the early 1880's to the present perhaps upward of a thousand or more were promising enough in one respect or another to be fairly widely tested by vineyardists in France. A considerable number of varieties have been eliminated after testing in France and undoubtedly a great many more will be eliminated in the future. In this country, somewhere between three hundred and four hundred French hybrid varieties are growing in Experiment Station vineyards, but only a few of this number are likely to prove of some value here.

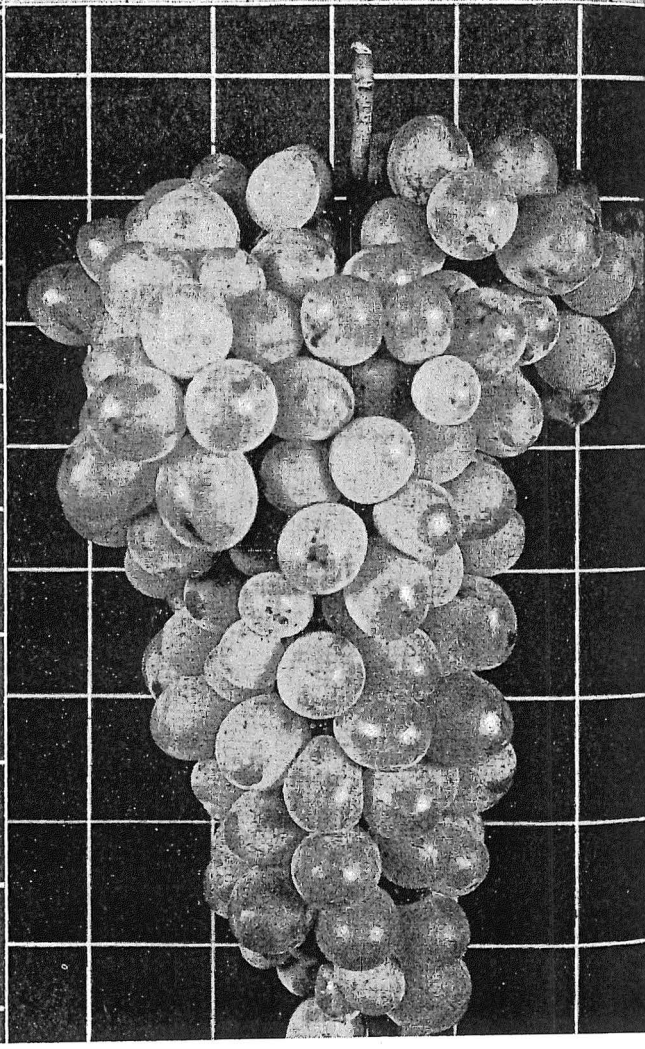
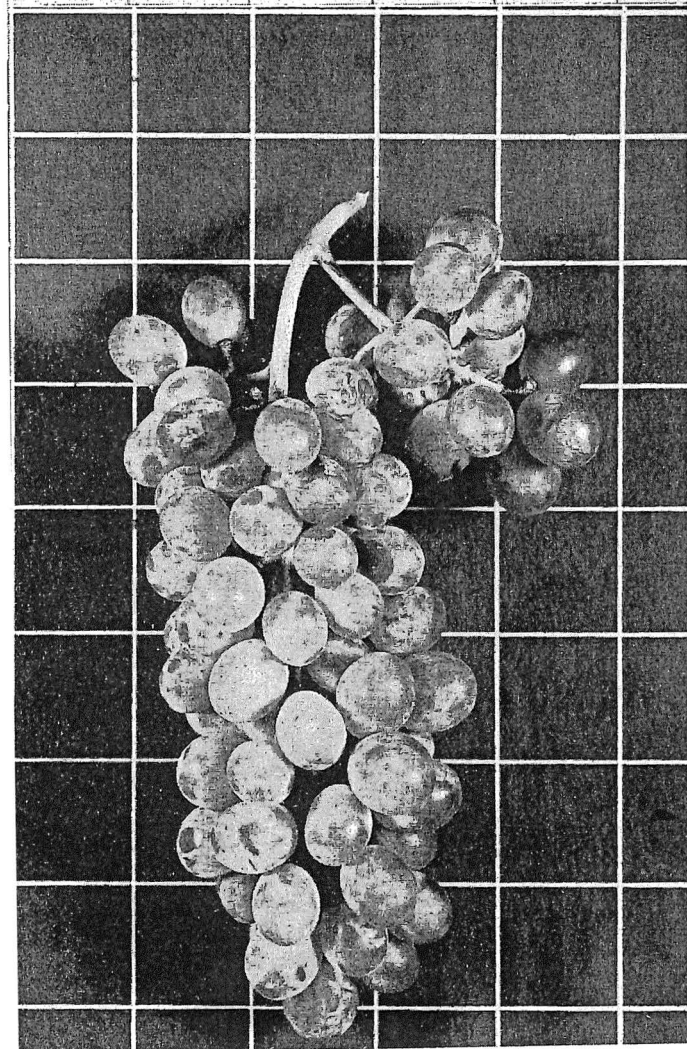
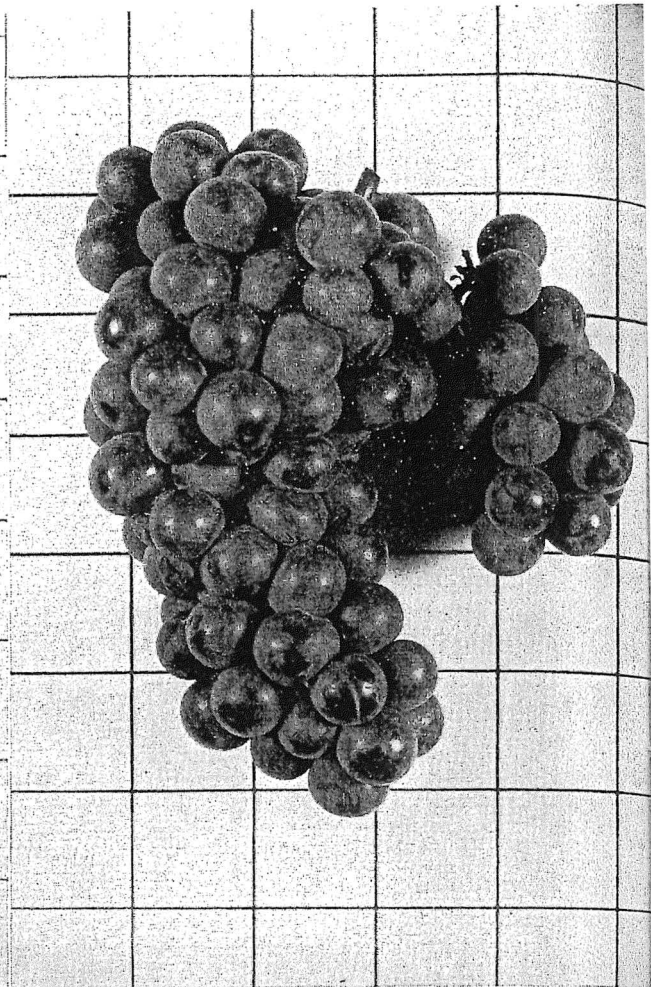
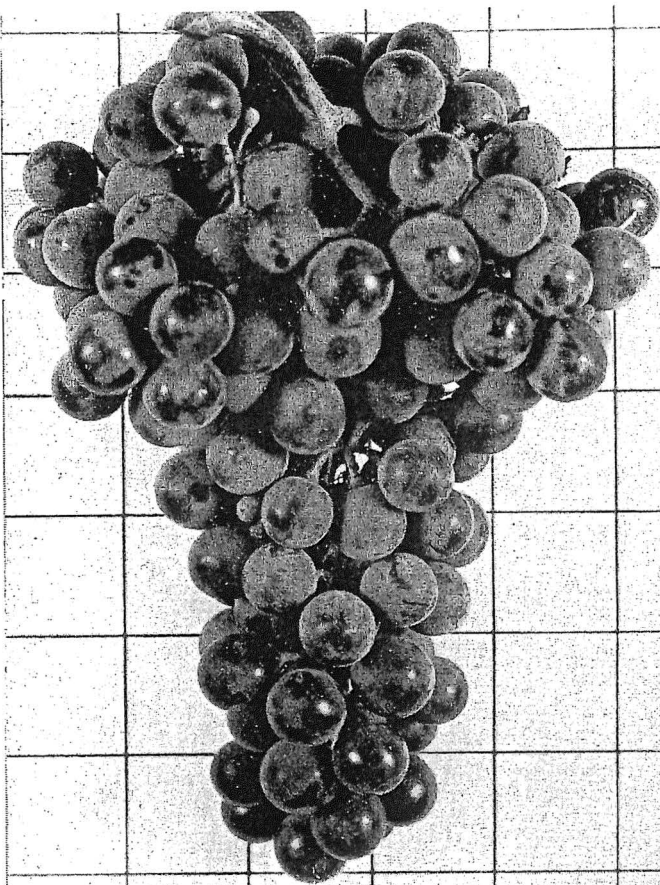
It must be stressed that the varieties listed here are recommended for trial only. Although these varieties appear to be promising in central Illinois, they may do better or worse in other areas. However, as of the present time, the following suggested list is our best estimate of the varieties most likely to prove the most satisfactory for table and wine uses under reasonable care. A few other varieties believed to be of approximately equal merit have been omitted because they have not been grown as long in our test vineyard.

Seyve-Villard 23-657—Late midseason black. Clusters are very large—up to 15 inches in length, shouldered, fairly loose to moderately compact, long with medium, oval jet-black berries. Vine is ultra-vigorous, very productive, hardy and moderately healthy. Primarily a red wine grape. Has a very high sugar content and makes a good red wine. The foliage is very ornamental with very dark green, "varnished," finely cut leaves. Suggested for trial in areas of similar climate to central Illinois and farther south.

Seyve-Villard 12-375—A midseason to late midseason variety with large to very large, heavily shouldered, broad, moderately compact clusters of above medium, oval berries of golden yellow. The vine is very vigorous, healthy, hardy, and productive. The flesh is crisp, tender, firm, with a good flavor of pure vinifera character, and adherent skin. While this variety makes a very good white wine, it is also a good table grape of neutral, sweet flavor. This variety, in the author's opinion, is the most outstanding French hybrid of them all when all factors are considered. In fact, it is probably one of the greatest hybrid grapes produced anywhere by the hand of man. This variety is deserving of the widest possible trial because of its many good points in fruit and vine. Highly recommended.

Seyve-Villard 5-276—Early midseason. Has medium large, shouldered, long, very compact clusters of below medium, spherical, yellowish-green berries. The vine is moderately vigorous to vigorous, hardy, healthy and very productive. Attains a high sugar content and makes a very good white wine. This variety deserves wide trial and should prove of value in the North because of its relative earliness and hardiness.

Seyve-Villard 12-309—A late midseason to late variety with large to very large clusters; shouldered, tapering with elongated oval, pinkish-yellow, medium berries. Flesh is crisp and tender with adherent skin and neutral flavor. Primarily for its good white wine but pleasant eating. The vine is very vigorous, healthy, hardy, and very productive.

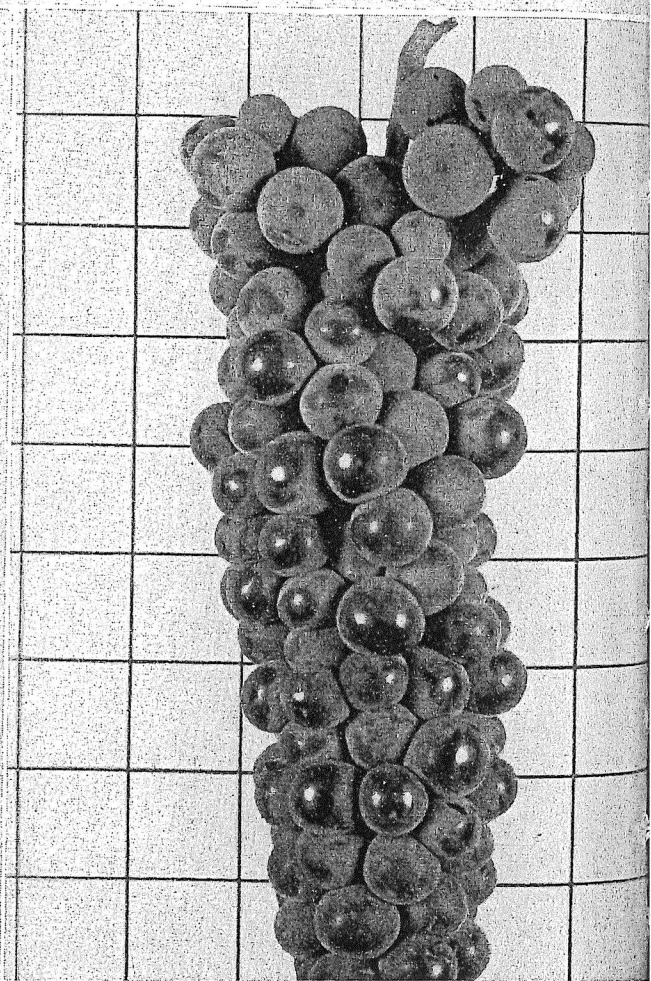
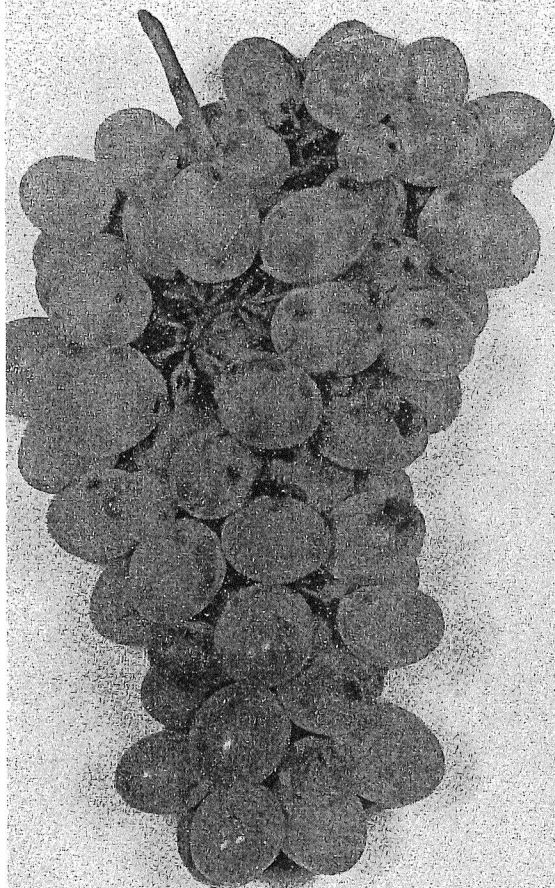
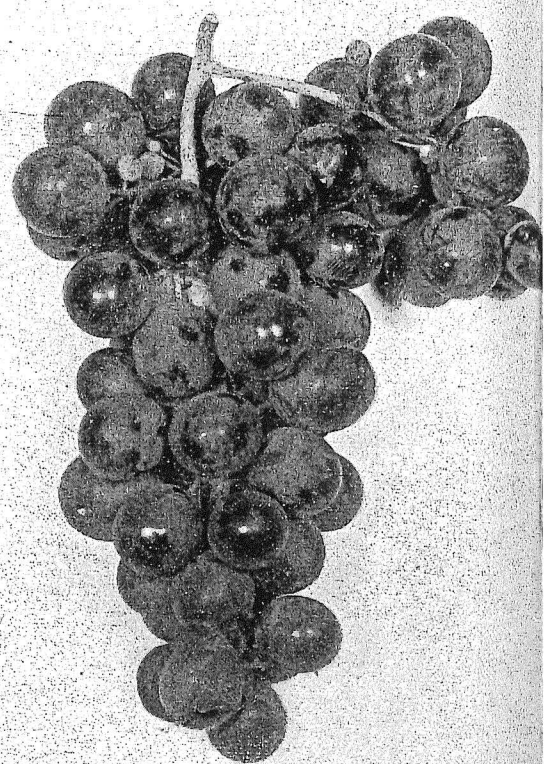
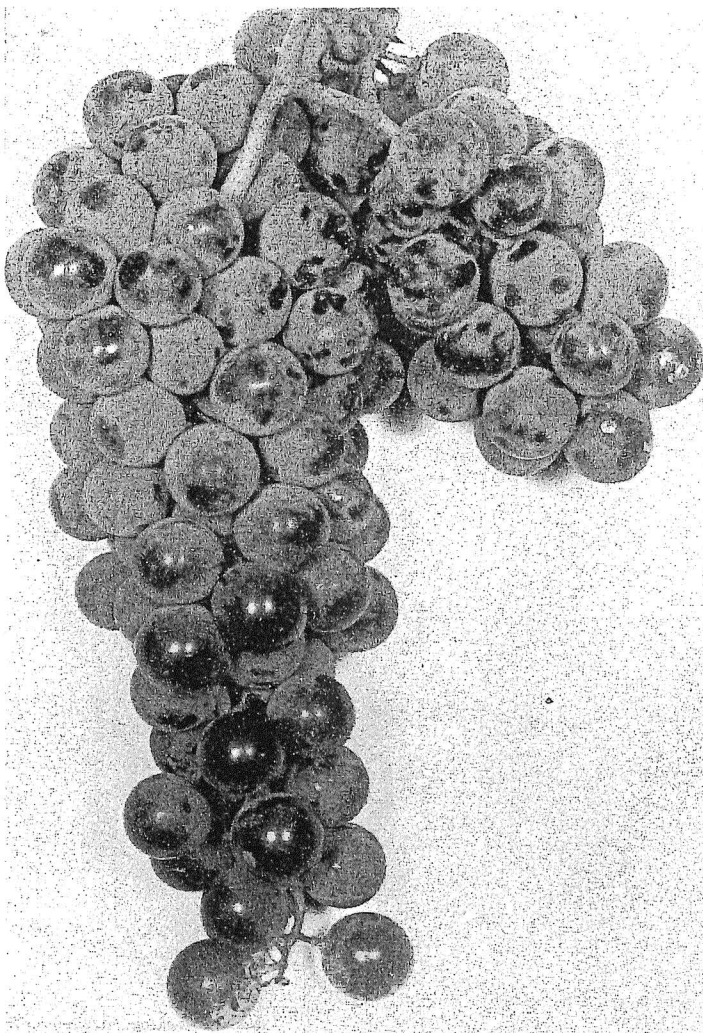


Joannes-Seyve 26-205—A late midseason variety with large, shouldered, medium compact clusters of medium, spherical black berries. A very vigorous, healthy vine of high production. A very good red wine grape and the fruit clusters will hang on the vine until frost without damage.

Joannes-Seyve 23-416—Early midseason. Has large, long, moderately compact to slightly loose clusters with oval, pink to light red berries with a peculiar spotted appearance. Vine is vigorous, healthy, hardy, and moderately productive. A very attractive table grape but useful for white wine also.

Seibel 8745—An early midseason black with medium large, compact clusters of medium, slightly ovate berries. Vine is moderately vigorous, healthy, very hardy, and very productive. Here it does much better than its famous sister, Seibel 7053, which is so widely grown in France. Seibel 7053 is a weak grower here and very susceptible to downy mildew and black rot. Makes a good red wine and is promising for trial in cold areas of the North.

Seibel 14664—An early midseason variety with large to very large, tapering, very compact clusters and very large, elongated oval, yellow berries. This variety is exceptionally beautiful in its fruit and in addition is probably the best table variety in the French hybrids. The flavor of the fruit is similar to Dattier de Bayrouth, one of the choice vinifera table varieties, and it has a slight muscat flavor like Dattier also if the vines are not overloaded. The vines are very vigorous, healthy, very productive and moderately hardy. Ripe rot (*Botrytis cinerea*) is often troublesome on this variety in years of high rainfall and humidity but can be successfully controlled by spraying with Captan. Another feature of this vine is the very attractive foliage of fine cut teeth, dark, shiny green color and a "varnished" appearance of the young developing leaves.



Bertille-Seyve 5563—A late midseason black with large, compact, shouldered, attractive clusters of medium berries. This is also a red wine grape and recommended for its rugged, hardy vine of exceptional health, vigor and production. The fruit keeps well on the vine.

Couderc 71-20—A late midseason variety with medium, shouldered compact clusters of medium, black berries. A very good red wine grape with a vigorous, healthy, hardy vine of high production. One of the first French hybrids and still widely grown in France. Always a reliable producer and a rugged vine.

Seibel 9110—An early midseason white variety of exceptionally beautiful fruit. The clusters are large, tapered, slightly shouldered to shouldered, compact to moderately compact with medium large, pointed oval or egg-shaped berries of beautiful golden yellow. This variety is an excellent table variety with thin, adherent skin, tender, crisp flesh of pure vinifera character. The sugar content is high and it makes a very good white wine also. The vine is vigorous, moderately healthy (slightly subject to downy mildew of the foliage in some years), hardy, and productive. Promising and deserves a wide trial

Bertille-Seyve 2667—an early midseason black variety with large to very large, long, compact clusters of medium, black berries. Primarily a red wine grape. A vigorous, productive vine of superb health and perfectly hardy here. The berries begin to color very early, long before complete maturity and will hang on the vine in good condition until freezing weather.

Seibel 1000—An early midseason black with medium-large compact clusters and medium berries. One of the hardiest of the French hybrids; has withstood -35°F. in South Dakota without injury. Has a vigorous, healthy, productive vine. One of the oldest French hybrids and still a good one for producing red wine. Has been planted considerably for wine in New York and Canada. Should not be planted in low-lying areas with very moist soil as it is subject to a physiological disorder in which some of the berries remain green without maturing. A very promising variety for those who live in the North where most varieties winterkill.

Seibel 5279—A very early variety with large, long, slender clusters of medium large, golden-yellow berries. This variety is one of the very earliest to ripen here, often during the last week in July in warm years, and is the earliest good quality table variety. The texture of the flesh is tender and crisp but too soft to ship or withstand rough handling, hence is recommended only for the home garden. The sugar content is high also and it makes a very good white wine. Should be sprayed carefully for black rot as it is quite susceptible to this disease. Very promising for the far North as it is hardy in northwestern Iowa and probably farther north.

Seibel 8357—A late midseason black with large, long, compact clusters of medium berries. This is the most promising teinturier wine variety tested here. It produces a wine of almost inky black color of highest quality. The vine is vigorous, healthy, hardy, and productive. For those who wish a deeply colored wine for blending, this variety is also very promising. High sugar content and the clusters keep well on the vine without loss until cold weather.

Seibel 11803—A late midseason to late variety with very large, shouldered, tapering, moderately compact to compact clusters with large, round-oval berries of light to dark red, depending upon exposure to the sun. This variety is a very good table grape if properly grown because of its crisp, firm but tender flesh, high sugar content, appearance and size. If pruned properly, the vine is vigorous, healthy, hardy and extremely productive. This variety must be pruned very short because of its extreme fertility; often each shoot will produce four large clusters. Makes an excellent white wine also. The foliage is exceptionally attractive with large, fine cut, dark green leaves of beautiful form. Unless properly pruned and not allowed to overbear, this variety may be disappointing.

Seibel 13053—A very early variety with medium large, slender clusters of medium, spherical black berries. The vine is very vigorous, healthy, hardy, and productive. One of the earliest varieties to ripen here, usually in early August although the berries begin to color in mid-July. Not a table variety but, ripening as it does when grapes are scarce, it is pleasant eating. Primarily useful for making a very good red wine. Promising for trial in northern areas because of its earliness and hardiness. Subject to bird damage.

Seyve-Villard 23-18—Late midseason. Has large to very large, tapering, shouldered, moderately compact clusters of medium large, short oval, black berries. While primarily a red wine grape, the tender, crisp, sweet flesh is pleasant eating when fully mature. The vine is vigorous, healthy, productive, and hardy. The fruit hangs well on the vine without loss until freezing weather. Slightly subject to black rot.