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The Minn. #78 Grape — Lady of Mystery

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In 1884 Louis Suelter of Carver, Minnesota offered for sale plants of his hybrid seeding grapes obtained by pollinating a local wild *Vitis riparia* with pollen of 'Concord' (1). He named four of these: 'Beta,' 'Dakota,' 'Monitor,' and 'Suelter.' They were all very similar in foliage and fruit characters and very distinctive in flavor, with acid too high to be considered good table grapes. Though only four were named, at least five were propagated by cuttings and sold to the public. 'Beta' soon became the one most offered by nurseries; it is still being sold today. Through the intervening years, there has been much confusion as to the specific identity of these varieties and it is well known that at least two distinct varieties are sold as 'Beta.' Because of the confusion and uncertainty surrounding them, they have a certain aura of mystery and romance. In fact both Dr. Alderman (2) at the University of Minnesota and Dr. A. F. Yeager (3) when at North Dakota State University doubted they were true hybrids, since their 'Beta' when selfed showed no reversion back to the *V. riparia* and *V. labrusca* species from which it was supposedly descended. This same pattern was experienced by T. V. Munson (4); when he selfed 'Herbemont,' a southern *V. aestivalis* hybrid which he designated a distinct species, *V. borquiniana*.

I was born in 1913 and it must have been near that time that Dr. M. J. Dorsey (5), then at the University of Minnesota, initiated a grape breeding project using 'Beta' as the hardy, adaptive parent and 'Agawam,' 'Campbell,' 'Concord,' 'Janesville,' 'Jessica,' 'Lutie,' 'Salem,' and 'Witt' as quality parents. From seedling populations resulting from these crosses many selections were made for propagation by cuttings in a second-test vineyard planted in 1923.

In 1944 four of these selections were named, #45 = 'Red Amber,' a red of very good flavor; #66 = 'Moonbeam,' a large-berried white of rather bland flavor; #69 = 'Bluejay,' a blue of improved quality; #158 = 'Bluebell,' a bit smaller than 'Concord,' of similar flavor but having a more tender and juicy pulp. Also considered for naming at that time was #78, a blue with larger clusters than 'Beta,' of similar flavor but lower in acid and having, in my opinion, the best texture of them all. Dr. A. N. Wilcox, then the small fruits breeder at the University of Minnesota, had these five selections sent to me that spring. As soon as they fruited, I used them all except 'Moonbeam' in breeding. I quickly saw that Minn.#78 was a very superior seed parent; its seedlings were winter hardy, ripened the fruit and wood very early even when the pollen parent was a grape of late maturity and had the highest sur-

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vival rate. Minn.#78 is pistillate, and seedlings obtained by pollinizing with varieties from the Geneva Station and with French hybrids often show reversion to *V. riparia,* having small berries of *Riparia* flavor with high acid. However, some of them combine the fruit quality of the pollen parent with the winter hardiness and early maturity of the seed parent.

My romance with Minn.#78 now spans nearly 50 years. I have planted many thousands of its seeds. Many hundreds of the resultant seedlings have fruited after culling both by hand and by our often very severe winters. The named varieties have all suffered winter injury here in our coldest winters and are not as hardy as I would like, yet I think they combine high fruit quality with winter hardiness to a greater degree than other varieties now in cultivation. In fact, 'Swenson Red' and 'Esprit,' the two most susceptible to winter injury, survived as first-year seedlings, an open and colder-than-normal winter without benefit of snow cover that killed at least three-fourths of their siblings. Seedlings from two other crosses were all killed.

During the decade of the seventies I worked as a gardener at the University of Minnesota Horticultural Research Center and read through the records of the work done there with grapes. From Dorsey's work, more than 200 selections were made to be given further testing. In only one case was the parentage given and that was Minn.#78 listed as Beta x Witt. 'Witt' is listed in "Grapes of New York" as a pure 'Concord' seedling having white fruit. Dr. Dorsey had used only two white-fruited kinds in his crosses with 'Beta,' the other being 'Jessica,' which is listed as a *V. labrusca* x *V. vinifera* hybrid ripening in very early season. As the seedlings of Minnesota #78 ripen the fruit and wood very early even where the pollen parent is late maturity, I have been of the opinion that 'Jessica' is more likely pollen parent of Minn.#78. The fruit texture of Minn.#78 and so many of its seedlings also suggest this, though being slipskin it is more vinifera-like than had the pollen parent been 'Witt.' Perhaps by questioning I am only adding to the confusion and mystery, but having worked at a research facility I am aware that with some workers labeling is not a high priority. Even in my work, done exclusively by myself, mistakes do happen. I know while pollinating in the vineyard a bagged cluster, a bee loaded with foreign pollen has on occasion made a landing on the blossom cluster in spite of efforts to keep it off. I have never discarded such a cluster because that happened.

I think that planting the seeds and tilling the seedlings to give them good opportunity to show their worth is equally important as the actual cross pollination. Now modern science through the use of electrophoresis can establish the true identity of #78's pollen parent. However, I believe I have made important discoveries concerning Minn. #78 by truthfully evaluating it through the growing and cultivation of its many seedlings by my own hand.

After more than 40 years and intercrossing some of its progeny to the fourth generation, I have here excellent material for future grape breeders striving for greater winter hardiness and disease resistance, coupled with very early maturity of fruit and wood. There now seems to be a revival of interest in such activity, especially among private individuals doing the work for their own satisfaction, trying to find varieties suited to their own particular environment—usually areas of short, cool-growing season and cold winters. Swenson hybrids are now in the Scandinavian countries where they are trying both wall culture and growing in the open, and also in Poland, East Germany, and England. All this has happened because Minn.#78 has freely transmitted the characters of early maturity and winter hardiness.

Its value as a seed parent has been demonstrated and it will live on as its progeny, the Swenson hybrids, will continue to be evaluated after I am gone. It is my hope that many individuals will find fascination as I have in their association and involvement with them and as their breeding is continued by enthusiasts living in areas not considered suited for grape culture, so will those areas be supplied with adapted plants.

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Peach Breeding in Yugoslavia

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Abstract

The principal peach production regions in Yugoslavia lie in the Mediterranean zone and in the vineyard areas of the continental part of the state. Peach production in Yugoslavia is 91.860 MT. The leading peach cultivar is 'Redhaven' and the main nectarine is 'Stark RedGold.' Vineyard peach seedlings are the main peach rootstock.

The peach breeding centres in Yugoslavia are: Fruit Research Institute, Čačak; Biotechnical Faculty, Ljubljana; Agricultural Faculty, Zemun, Beograd; Fruit and Grape Research Station, Bolec, Beograd and Agricultural Faculty, Novi Sad.

The peach and nectarine breeding programs in Yugoslavia concentrate on: germplasm improvement, breeding early ripening cultivars, breeding late ripening fresh freestone cultivars and breeding canning clingstone peach cultivars adapted to continental climate. As well the programs include: inbreeding genetic dwarf, Pillar, sharka (Plum Pox Virus) and non-traditional breeding approaches.

Federal Committee of Agriculture in Beograd has released seven peach cultivars: 'Julia' (-20 'Redhaven'), 'Slovenia' (-12), 'Čačak' (-6), 'Dora' (+3), 'Maya' (+6), 'Vesna' (+8) and 'Radmilovčanka' (+50) in Yugoslavia.

Introduction

The peach was introduced to Greece in the time of Alexander the Great between 400 and 300 B.C. It was introduced in the area of Yugoslavia (Macedonia and Serbia) shortly after the beginning of Christianity.

Hesse (4) emphasizes the peach is primarily a tree of the temperate zones. The important centres of commercial peach production usually lie between latitudes 30° and 45° N and S. At higher latitudes minimum winter temperatures and spring frosts are the usual limiting factors.

Yugoslavia is between latitudes 41° and 47° N. Therefore, the main peach production regions in Yugoslavia lie in the Mediterranean zone and in the vineyard areas of the continental part of the state.

Production

Peach production is 91.860 MT, average 1981/85 in Yugoslavia which ranks the country seventieth in the world and seventh in Europa. This is 1.23 percent of the world and 2.37 percent of the European peach production respectively.

Among fruit and nut production in Yugoslavia, peach is in fifth place, after plum, apple, pear and sour cherry.

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