

DEMAND INCREASING FOR ARONIA AND ELDERBERRY IN NORTH AMERICA



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Elderberry and Aronia (chokeberry) are common in different parts of Europe, but seldom seen in the US. This is a situation that is changing as products from these berries begin to appear in shops and even superstores. In spite of the high price of the fruit and its primary processed products, very little crop is actually produced in the US. There is only one Aronia producer who is located in Oregon, but several small-scale elderberry growers can be found scattered around producing mainly for local consumption. The recent rise in popularity for Aronia is due to a line of juice blends introduced by Wildland a few years ago. The juice is doing very well in Costco on the West Coast. Elderberry is appearing more and more as it replaces Echinaceae as a popular cold and flu nutraceutical. Syrup and pulp are imported from abroad. Both are used as food coloring because of their deep purple pigment.

Botanical Classification



Aronia~ The genus name Aronia has been replacing the rather unpleasant sounding common name, black chokeberry. Aronia is a member of the Rosaceae family, and the cultivars used for fruit production are from the species *Aronia melanocarpa*.



The plant originated in North America, and cultivar selection was done in Europe. Cultivars are self-fertile. (*Ripe Aronia fruit, left*)

Elderberry~ Elderberry is a member of the family Caprifoliaceae with 13 species native to North America. Commercially, we are interested in *Sambucus nigra L. ssp. canadensis* (North American, formerly classified as a separate species), and *Sambucus nigra L.* that is native to Europe. The fruit clusters (*cymes, pictured right*) of the *S. nigra* cultivars are larger than those of *S. n. canadensis*. In addition, some of the *S. nigra* cultivars have superior growth habits. Elderberries are only partially self-fruitful, and planting of two or more varieties within 60 feet of one another is beneficial. It is assumed that any pair of cultivars will function as mutual pollenizers.

Cultivars

Aronia~ 'Viking' and 'Nero' are cultivars that are commonly available in North American plant catalogs. DNA fingerprinting research done in Sweden by Niklas Jeppsson has shown very little difference between available cultivars. In fact, the cultivars perform about the same commercially, and Niklas stated in an interview "it doesn't really matter which cultivar one uses. Seeds of the cultivars can even be planted, and the plants will be like their parents, quite suitable for commercial production."

Elderberry~ In the *S. nigra* species, 'Samdal' and 'Samyl' are the most highly recommended for yield and desirable growth habit (produce new suckers annually). Two North American nurseries

have germplasm and are propagating these in tissue culture. In the *S. n. canadensis* species, 'York', 'Nova', 'Johns', and the 'Adams' series are available. York and Nova are touted as the heavier yielders. These cultivars are products of breeding work that ended in 1960.

Propagation

Aronia~is very easy to propagate. Softwood or semi-softwood cuttings can be propagated with mist in July. Divisions from established plants can be made at a rate of as many as 25 per two year old plant. Stool beds are often used, and of course seeds that have been stratified.

Elderberry~can be propagated from softwood cuttings in June and from tissue culture. Hardwood cuttings taken in early spring have about a 50% rooting rate, and are susceptible to damage in overly wet media. Divisions, and even seed propagation can also be used for propagation.

Cultural Practices

Aronia~ is adaptable to a wide variety of neutral to slightly acid soils. Less fertile soils are desirable to keep plants smaller in size. It is suggested that plants be placed 0.8-1.0 meters apart and mulched with plastic to prevent weed growth. Plastic can be removed after two to three years as plants sucker and fill in the hedgerow. Plant growth is usually so dense after three to four years that further weed control within the row is unnecessary. At five to seven years, selective pruning is done to remove the oldest, thickest branches, and keep the center open. Frost protection is not necessary since plants bloom so late, mid May in New York. Aphids on shoot tips, and leaf-eating beetles are possible pests, but plants are so vigorous, that pest damage that slows them down will not have much of a negative effect. Since Aronia is in the Rosaceae family, fire blight is a potential problem, but has not been reported as such. (Above right: *Aronia* hedgerow with dense mat of growth. Prune thick branches as needed)



Elderberry~ prefers a sandy to heavy loam soil with a pH of 5.5-6.5. It is recommended that plants be set out at 0.75-1.0 meter spacing, and that every other plant be removed after three to four years. This will improve chances of getting an economic return faster. The 'Samdal' and 'Samyl' cultivars have a nice growth habit where they throw canes from the base every year in good numbers. Six to eight canes are maintained per plant to fruit the following year. Flowering takes place in mid June in New York. In the fall after fruiting, the spent canes are removed, and a rotation is maintained. This way, canes are never left for more than a year, and plants are maintained as a five to seven foot bush. Aphids, leaf wrinkling mites, birds, cane borers, mildew, and botrytis blossom blight can be pest problems. Tomato ringspot virus has been a problem in the past with *S. n. canadensis* cultivars, but is less of a problem with *S. nigra*.

Harvest

Aronia~ is mechanically harvested between August and September. Five to ten tons per hectare can be expected in about five years, once plants have matured. Some yield can be expected in the first years, but plants often have weak branches that fall over in the ground.



Elderberry~ is picked by hand in the US, although mechanical harvesting is a possibility. Twenty tons per acre are produced in Denmark, while four to twelve tons per acre are recorded in New York. The *S. nigra* cultivars are higher yielding, especially when grown as hedge-rowed bushes. Fruits are picked as whole cymes (*pictured right*) and frozen until ready to use. A premium is paid for stem-less frozen berries. Harvest takes place from August through September. Flowers can also be harvested around June 15 and sold fresh, or processed.

Products and Uses

Aronia~ is used to produce syrup, juice, soft spreads, and tea. The tea is usually a blend with other more flavorful ingredients including black currant. The berries are also used to make food coloring.

Elderberry~ is also used for food coloring. Both flowers and fruits are used to produce cordials, beverages, soft spreads, wine, tea, and nutraceutical products. Flowers and fruits both have a fresh market in New York and elsewhere. Fresh flowers



are used to make fritters, in fruit salad (delightful star-shaped petals), and baked goods. Many folks are saying that elderberry will replace Echinaceae as a top cold and flu remedy. (*Above: Elderberry and Aronia Products; Left: Elderberry flower cluster ready to harvest*)



In Summary

Both elderberry and Aronia are gaining popularity in the US for their health benefits and quality processed products. Both plants are easy to grow, have few pests, and can have mechanical cultivation practices employed. A number of processors are looking for potential growers to make contracts. Global prices are high, and demand is expected to continue growing.

(Reprinted from: New York Berry News, [Vol. 3 No. 11, March 17, 2004.](#))