



Juneberries

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Introduction

Juneberry (*Amelanchier* spp.), also known as serviceberry, is a small multiple-stemmed tree or shrub that bears edible fruit. This genus includes saskatoons (*Amelanchier alnifolia*), which are grown commercially for fruit production in Canada and the North Central U.S. Unfortunately, saskatoons are not considered winter hardy in Kentucky and have serious leaf spot problems in this region. Most other species of *Amelanchier* are cultivated for use in landscape plantings; however, several of these ornamental cultivars show potential for fruit production. Among these are the Allegheny serviceberry (*A. laevis*) and hybrids (*Amelanchier x grandiflora*), which are hardy and have good leaf spot resistance in Kentucky.

Juneberries have soft, small (¼- to ½-inch diameter), sweet-tasting fruit that have a long stem and resemble a blueberry in appearance, but not in flavor. The fruit ripens to red, purple, black, or creamy white, depending on the species and cultivar. While juneberry seeds are larger and more noticeable than those in blueberry, they are soft and not objectionable.

Marketing

Although commonly eaten “out of hand,” juneberries are also ideal for jams, syrups, juices, pies, rolls, and sweetbreads. Berries can be dried and marketed as a product similar to raisins. Most consumers are unfamiliar with juneberries, so sampling and point-of-purchase materials about handling and use would need to be included upon sale of juneberries or juneberry products. Juneberries have high nutrient and antioxidant content, and that might be noted as part of point-of-purchase consumer education.



Potential markets for fresh and value-added juneberry products include farmers markets and roadside stands. Community supported agriculture (CSA) growers could include this fruit in their offerings. Frozen juneberries may also be sold to small, locally owned grocers or specialty markets. High-end restaurants, or those specializing in local fare, could be interested in featuring a new product such as juneberry. Some Canadian producers have successfully marketed juneberries as part of a U-pick operation.

Market Outlook

Most commercial juneberries (saskatoons) are grown in Canada, where production is unable to keep up with demand. They report a growing interest in juneberry for fresh market, commercial processing, and freezing industries. In the U.S., efforts to investigate commercial production possibilities have occurred in Michigan, New York and several North Central states (such as Nebraska, Wisconsin, and the Dakotas). However, large-scale production remains at



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best limited in the U.S., and juneberry has not been evaluated for large-scale production in Kentucky. Interested growers should start small, planting at least two or three different cultivars in a field, orchard, or garden site. Larger plantings should not be attempted until the crop has been evaluated over several seasons and the grower has test-marketed their product.

Commercial production of juneberries will require overcoming some significant obstacles. These include: difficulty in obtaining large quantities of planting material at a price that is economically feasible, lack of consumer awareness, and the long-term nature of the enterprise. However, juneberries are one of the first fruits to ripen in the spring during the latter part of May and early June (strawberry season), and occupy a unique niche market for the producer willing to develop this crop.

Production Considerations

Cultivar selection

While a few cultivars have been planted at the University of Kentucky Horticulture Research Farm, there is currently insufficient research data upon which to base local cultivar and production recommendations for fruit production. However, the following cultivars can be suggested for trial plantings based on Kentucky observations of ornamental serviceberries, and on Dr. Michael Dirr's reports from Georgia.

'Autumn Brilliance' — Purple fruit taste good and are $\frac{3}{8}$ -inch in diameter; plants reach a height of 20 to 25 feet at maturity; fairly leaf spot and fire blight resistant; grows and produces well in Kentucky.

'Ballerina' — Fruit are purple when ripe and $\frac{3}{8}$ - to $\frac{1}{2}$ -inch in diameter; Dirr rates this fruit as "superb, large, sweet and juicy." This plant reaches a height of 15 to 20 feet; is hardy as far north as zone 4; has very good leaf spot and fire blight resistance.

'Prince Charles' — Fruit are $\frac{3}{4}$ -inch in diameter and rated high in taste evaluations in Georgia; plant is upright and reaches an estimated height of 25 feet.

'Princess Diana' — Sweet, juicy blue-black fruit are $\frac{3}{8}$ -inch in diameter; plants can reach a height of 25 feet; good leaf spot resistance.

Site selection and planting

Juneberries can be grown on a wide range of well-

drained soils with a pH between 5.5 and 7.5. Slightly sloping sites, especially northeast slopes, are advantageous to juneberry production. Avoid cold pockets since juneberries may be subject to occasional spring flower losses from frost. Irrigation during establishment and fruiting will increase the likelihood of success.

It can be difficult to obtain a significant quantity of planting stock for commercial production because most U.S. nurseries supply serviceberry for ornamental use, not fruit production. The most successful means of propagation include plant division, root cuttings, and tissue culture. Hardwood cuttings are generally difficult to root, while softwood cuttings, if taken at the right growth stage, are more easily rooted. Plants can be propagated from seed that has been subjected to cold stratification; however, up to a third of the plants will differ from the parent. Healthy plants 1 to 2 feet tall are best for transplanting.

Juneberries, which can grow to a height of 18 to 25 feet, should be maintained at a height of 6 to 9 feet in commercial plantings. Fruit on shorter plants is easier to harvest and easier to protect from birds. Yearly pruning in the spring is generally necessary after the first three to four years, while more extensive pruning may become necessary when plants are 6 to 8 years old.

Pest management

Juneberries are susceptible to *Fabraea* (Entomosporium) leaf spot, cedar-serviceberry rust, powdery mildew, and fire blight. These diseases tend to be minor problems on cultivars that have some resistance to them. Japanese beetles can become a major problem in some plantings. Other potential insect pests include plum curculio, leaf miner, and pear slug sawfly. Birds, which will totally strip plants of their fruit, are the greatest threat to juneberry production. A well-planned bird management program will be necessary in most locations. Other wildlife pests can include mice, rabbits, and deer. Weeds need to be controlled with non-chemical means since there are no herbicides registered for commercial fruit production.

Harvest and storage

Juneberries bloom in early spring, with fruit forming six to eight weeks later in late May and early June. Plants begin to bear fruit two to four years after

transplanting. Significant yields can be expected after six to eight years, with maximum yields after 12 to 15 years. Mature plants may yield 10 to 15 pounds of fruit per shrub. Well-maintained plantings can be productive for 30 to 50 years.

Clusters of fruit ripen fairly uniformly, making it possible to pick the entire crop within a narrow harvest window. Juneberries are hand-picked for fresh market. Fresh fruit has a short shelf-life, but flash-frozen berries can be stored for two years under the proper conditions.

Labor requirements

Labor needs for a mature $\frac{1}{5}$ -acre planting are approximately eight to 12 hours for production, 60 to 80 hours for harvest, and 10 to 15 hours for packing/grading.

Economic Considerations

Initial investments include land preparation, purchase of planting stock, plant establishment, and installation of an irrigation system. The limited supply and relatively high cost of healthy 2-year-old juneberry plants make even small-scale juneberry production economically risky for the Kentucky grower. Growers could also consider propagating their own plants as long as there are no patent concerns.

Establishment costs (2016) for juneberries are estimated at \$2,100 per $\frac{1}{5}$ -acre planting. Annual production costs for an established $\frac{1}{5}$ -acre planting could approach \$1,000, depending on the type of weed control (mulch) used and wildlife prevention needed. Harvest and marketing costs for established juneberries may fall in the \$900 to \$1,200 range per $\frac{1}{5}$ -acre. Total expenses per $\frac{1}{5}$ -acre of established berries, including both variable and fixed, would come to approximately \$2,000. Presuming gross returns of \$3,000 per $\frac{1}{5}$ -acre, returns to land, capital, and management would be approximately \$1,000 per $\frac{1}{5}$ -acre of established berries. Like all berry crops, several years of full production may be needed before plant costs and other establishment expenses are recouped.

Selected Resources

On the Internet

- *Amelanchier x grandiflora* Apple Serviceberry, Fact Sheet ST-77 (U.S. Forest Service, 1993) http://hort.ifas.ufl.edu/database/documents/pdf/tree_fact_sheets/amegraa.pdf
- *Amelanchier x grandiflora* ‘Autumn Brilliance’ Fact Sheet ST-78 (U.S. Forest Service, 1993) http://hort.ufl.edu/database/documents/pdf/tree_fact_sheets/amegrab.pdf
- *Amelanchier laevis*, Allegheny Serviceberry, Fact Sheet ST-75 (U.S. Forest Service, 1993) http://hort.ifas.ufl.edu/database/documents/pdf/tree_fact_sheets/amelaea.pdf
- Growing Juneberries — A Manual for Orchardists (Prairie Elements, 2005) <http://www.prairie-elements.ca/saskatoons.html>
- Economics of Saskatoon Berry Production (Alberta Agriculture and Forestry, 2015) <http://www1.agric.gov.ab.ca/%24department/deptdocs.nsf/all/econ7053>
- Juneberries (Cornell University) <http://www.fruit.cornell.edu/mfruit/juneberries.html>
- Juneberries as a Farm Crop in the Northeast (Cornell University Extension, Ontario County, NY) <http://cceontario.org/temp2.asp?id=juneberry-production>
- Juneberries (Carrington Research Extension Center, North Dakota State University, 2013) <https://www.ag.ndsu.edu/CarringtonREC/northern-hardy-fruit-evaluation-project/fruit-index/juneberry>
- Saskatoon Berry: A Fruit Crop for the Prairies (Purdue University, 1993) <http://www.hort.purdue.edu/newcrop/proceedings1993/v2-516.html>

Books in print

- *Manual of Woody Landscape Plants*, 5th edition. Michael Dirr. 1998. Stipes Publishing L.L.C., Champaign, IL. 1250 pp.
- *Uncommon Fruits for Every Garden*. Lee Reich. 2004. Timber Press, Portland, OR. 308 pp.

Suggested Citation:

Kaiser, C. & M. Ernst (2017). *Juneberries*. CCD-CP-11. Lexington, KY: Center for Crop Diversification, University of Kentucky College of Agriculture, Food and Environment. Available: <http://www.uky.edu/ccd/sites/www.uky.edu/ccd/files/juneberry.pdf>

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April 2017

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