

Uncommon Fruits with Market Potential

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The major fruit crops of temperate zones with cold winters are the pome fruits, the stone fruits, brambles, blueberries, strawberries, and grapes. For the past 25 years, I have been identifying and studying a number of uncommon fruits that might expand this palate; such fruits have been selected for their unique and delectable flavors as well as for their pest resistance. These fruits are well suited to upscale and ethnic markets, but, more importantly, their pest resistance allows for environmentally sound, “sustainable” production, suitable for the growing “organic” market as well as, of course, conventional markets.

The major temperate zone fruit crops are typically shipped long distances where they are treated as just another commodity in the world market. Most of the uncommon fruits highlighted in the present research are as yet unsuitable for long term storage and shipping; however their unique, delectable flavors, and their ethnic appeal, make them ideal for growing near large metropolitan areas. Such regions would provide markets for the fruit as well as tourists visiting regions where the fruits are grown. Because these uncommon fruits require little or no pesticide sprays, there should be no conflicts with the increasing suburbanization that is so common in many regions where conventional fruits are presently grown.

UNCOMMON FRUITS ONCE POPULAR

Medlar

A number of the uncommon fruits highlighted have been popular in the past. One such fruit is medlar (*Mespilus germanica* L., Rosaceae, Zone 4), a fruit whose popularity peaked in the Middle Ages in Europe. The tree is naturally small, about eight feet high, with single blossoms that open late enough in spring to usually escape spring frost. Almost all the blossoms set fruit without cross-pollination.

The commercial downside of this fruit has been its appearance, described by one writer as a “*crabby-looking, brownish-green, truncated, little spheroid of unsympathetic appearance.*” Medlar is a pome fruit, about three inches across, russeted, and with its calyx end flared open. The fruit is harvested after the leaves drop in autumn, and then must be bletted, or allowed to sit in a cool room until the flesh softens. When ready to eat, the flesh is brown and mushy—not visually appealing but with a delectable flavor akin to old-fashioned applesauce with a dash of spice and wine-y overtones.

Cornelian Cherry

Cornelian cherry (*Cornus mas* L., Cornaceae, Zone 5–8) is another now uncommon fruit that has been popular in the past. Remains of meals with this fruit have been found at Neolithic sites of 7,000 years ago in Europe. The fruit was popular in ancient Greece and Rome and continued to be eaten up until about 100 years ago, when the tree began to be grown strictly as an ornamental, its fruit forgotten (except in the Ukraine, where it is still enjoyed).

Cornelian cherry is a medium-sized tree that is partially self-fertile. A number of fruiting varieties are available, usually with red fruit although some yellow-fruited varieties are also available. The fruit is the size of a cherry and, similarly, has a single, large pit; it has been suggested as an easier-to-grow substitute for tart cherries. The tart flavor of cornelian cherries mellows considerably if the fruit is allowed to hang longer on the tree or even if the fruit is harvested and let sit for a couple of days.

Alpine Strawberry

Alpine or wood strawberry (*Fragaria vesca* L., Rosaceae, Zones 3–10) is one of the strawberries of antiquity, the strawberry that was eaten before chance hybridization of two American strawberry species led to the modern garden strawberry. Drawbacks of alpine strawberry as a commercial fruit are its small size and its softness. On the other hand, if the berries are picked ripe, they have an intense, delicious flavor. The plants do not make runners, which eases management, and they are easily grown from seed. Particularly exciting are the white fruited varieties, which come true from seed, are resistant to bird depredation, and have pineapple-like flavor.

Currants and Gooseberries

The *Ribes* genus, which includes currants and gooseberries, offers fruits which are very popular today in northern Europe but are little known in the US. The reason the fruit is so little known in the US is because all *Ribes* were banned in the early 20th century after being implicated as alternate hosts for blister rust, a disease of white pines. In fact, wild *Ribes* are an important vector for the disease and cultivated gooseberries (*Ribes uva-crispa* L. and *R. hirtellum* Michx., Saxifragaceae, Zones 4–7) and red currants (*Ribes petraeum* Wulfen., *R. rubrum* L., and *R. sativum* (Rchb.) Syme, Saxifragaceae, Zones 3–7) are not very susceptible. The federal ban was lifted in the 1960s, but by then American had virtually forgotten about these fruits and nurseries offered inferior varieties, such as ‘Pixwell’ gooseberry.

A “*Ribes* renaissance” is now taking place. Nurseries are offering more and higher quality varieties. Growers and consumer are realizing the range in flavors and appearance of gooseberries and the importance of selecting those resistant to powdery mildew and leaf spot disease. On the basis of my research, I would particularly recommend such gooseberry cultivars as ‘Hinomakis Yellow’, ‘Captivator’, and ‘Poorman’. European blackcurrant (*Ribes nigrum* L., Saxifragaceae, Zone 4–7) is garnering interest for the delicious jams and juices it makes and for its healthful properties. Blackcurrants have three times the vitamin C of oranges and are extremely rich in anti-oxidants. Blackcurrant is susceptible to white pine blister rust disease, but rust resistant and immune varieties have been developed. Among the most promising cultivars in my tests, in terms of disease resistance, yield, and flavor, is ‘Belaruskaja’.

UNCOMMON FRUITS LIMITED TO CERTAIN AREAS

Juneberry

Juneberry (*Amelanchier* spp., Rosaceae, also known as serviceberry and shadblow, Zones 3–8) and lingonberry (*Vaccinium vitis-idaea* L., Ericaceae) are two uncommon fruits that are limited more than the others in where they could best be grown (Fig. 1). Juneberries are pome fruits, susceptible to many of the same pests as apple, with susceptibility varying greatly even within limited areas. Lingonberries are plants of cold climates that do poorly where summer temperatures are high; on the other hand, they do not tolerate temperatures much below 10°F (–12°C) without snow cover.

Juneberries are native throughout the US, with various species ranging from medium-sized trees to shrubs to subshrubs. The best quality fruits are borne on *A. alnifolia* Nutt., the Saskatoon (for which there is some commercial production in the Canadian prairies), *A. laevis* Wieg., the Allegheny serviceberry, *A. canadensis*, the thicket serviceberry, and *A. ×grandiflora* Rehd., the apple serviceberry. The plants bear fruit without the need for cross-pollination, the fruit at its best being sweet and juicy with the richness of sweet cherry and a hint of almond flavor from the seeds. Cultivars of *A. alnifolia* have been selected for their fruit while cultivars of the other species have been valued for their ornamental qualities.

Lingonberry

Lingonberry is a low-growing, evergreen shrub that spreads by underground runners (Fig. 2). The plants are native throughout the northern regions of the world, although the species is separated into two botanical varieties each that differ in morphology and range. The larger of the two, *Vaccinium vitis-idaea* var. *vitis-idaea*, grows about two feet high, has 2.5 cm-long, pointed leaves; it is hardy to Zone 4 and native to lowlands of Europe and northern Asia. The more diminutive variety, *Vaccinium vitis-idaea* var. *minus*, Ericaceae, stays under 20 cm and has commensurately smaller leaves, 0.8 × 0.4 cm, oval, and rounded at



Fig. 1. Juneberries, a pome fruit, ripening on the branch of an unidentified species of *Amelanchier*, resemble blueberries but have a unique flavor that is sweet with a hint of almond.

their tips. Variety *minus* inhabits mountains in Scandinavia and extends westward to Iceland, Greenland, and northern portions of North America; it is hardy to Zone 2. Natural hybrids of these two lingonberries occur in Scandinavia, where the fruit is very popular.

Like many other members of the Ericaceae, lingonberry demands rather specific soil conditions: high humus, extreme acidity (pH 4 to 5), low fertility. Although a number of cultivated varieties exist, the bulk of the commercial harvest is from wild stands. Great variation exists in productivity among the cultivated varieties. The plants have the potential to flower and fruit twice each growing season, the flowers are partially self-fruitful with cross-pollination increasing both the size and number of berries. The fruits have been compared to the Thanksgiving cranberry (*V. macrocarpon* Ait.) but are far more palatable both raw and cooked.

UNCOMMON FRUITS NEEDING SOME GENETIC IMPROVEMENT

The fruits of many of the uncommon fruits I have studied are known as unselected seedlings or relatively few selected cultivars. Even in this rather primitive form, the fruits are quite delicious—a hint of what they might be with some deliberate selection and breeding.

America Persimmon

American persimmon (*Diospyros virginiana* L., Ebenaceae, Zone 4) began to attract interest in the latter half of the 19th century; the cultivar ‘Early Golden’ was selected from the wild about 1880 and almost two dozen other superior fruiting cultivars soon followed. As compared with more familiar Asian persimmons (*D. kaki* L. f.), the best American persimmons are smaller, with a drier texture and richer flavor, something like a wet, dried apricot dipped in honey with a dash of spice.

Near its northern limits, American persimmon grows to be a medium sized tree; further south, the tree can grow quite large. In the wild, trees are monoecious but many of the cultivated varieties, including ‘Early Golden’ and its progeny, are self-fruitful. Near the northern limits of its cultivation, it is important to select varieties that are cold-hardy and can ripen within the shorter growing season; ‘Szukis’ (Fig. 3) is one such variety that is also self-fruitful.

The most serious market limitation for American persimmon is its texture, which is too soft to withstand handling. Firmer texture or the ability to ripen after being picked firm, as is the case with some Asian persimmons, would overcome this drawback.

Gumi

Gumi (*Elaeagnus multiflora* Thunb., Elaeagnaceae, Zones 4–9) is a self-fruitful shrub whose fruit (Fig. 4), the size of a small cherry and with a refreshing, sprightly flavor, is eaten in Japan. It is extremely rich in



Fig. 2. Lingonberry (*Vaccinium vitis-idaea*) is a low growing evergreen shrub often bearing two crops each season of pea-sized, red berries that are usually cooked but also taste good fresh.



Fig. 3. Fruits of ‘Szukis’ American persimmon (*Diospyros virginiana*) cling to branches for a few weeks after leaf dehiscence; the orange fruits are soft and very sweet with a rich flavor.

lycopenes. Two commercial limitations of gumi fruits are its size and its astringency, the latter of which somewhat limits its fresh use.

Nanking Cherry

When Nanking cherry (*Prunus tomentosum* Thunb., Rosaceae, Zones 3–6) was introduced into the US from China around the end of the 19th century, it was met with great fanfare both as an ornamental plant and as a fruit plant (Fig. 5). Some breeding has been done in Russia and there was some breeding done in the US following its introduction, but now only seedling plants are available. The flavor of even seedling fruits is all quite good, something between that of a sweet and a sour cherry. Shortcomings of Nanking cherry are its small fruit size and the fact that the stem detaches from the fruit at harvest, leaving a hole that bleeds juice and severely limits storage and shipping. But besides starting out with relatively good flavor, the plant also has value for its tolerance to adverse conditions (in its native habitat temperatures might range from -50°F (-45°C) in winter to plus 110°F (43°C) in summer), its precocity, the frost resistance of its blossoms, and its heavy production.

UNCOMMON FRUITS WORTH IMMEDIATE TRIAL OVER A WIDE RANGE

Pawpaw

Pawpaw [*Asimina triloba* (L.) Dunal, Annonaceae, Zones 4–8] is a native American fruit which, despite its cold hardy, has many tropical aspirations: It is the northernmost member of the Anonaceae, its leaves retain their healthy, tropical lushness throughout the growing season, and the flower, being a multiple ovary, bears bunches of fruits reminiscent of banana “hands.” The fruit, with its creamy, white pulp, has even been likened to banana (with hints of pineapple, mango, and avocado), as well as vanilla custard, and crème brûlée (Fig. 6).

The tree needs cross pollination but little else. Some research is needed into the effect of cluster or bunch thinning on fruit size and the development of nonsuckering rootstocks. Research is also needed into

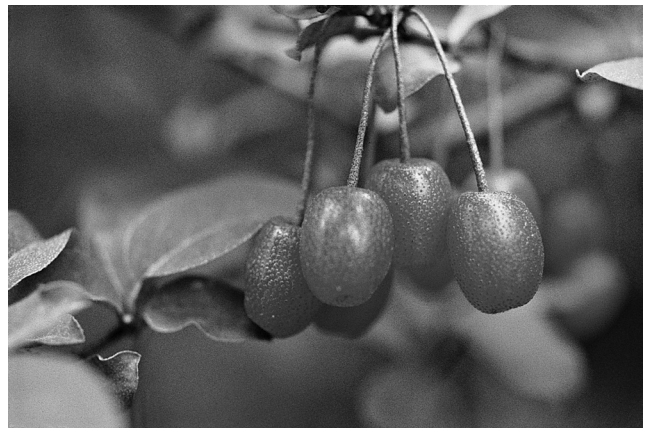


Fig. 4. Gumi (*Elaeagnus multiflora*) fruits are the size of small cherries, very juicy, and have a refreshing but somewhat tart flavor that could be improved by breeding.



Fig. 5. With cross-pollination, fruit set of Nanking cherry (*Prunus tomentosa*) is very high, yielding red fruits about 1.6 cm across with flavor, depending on the clone, somewhere on the spectrum between that of common sweet and tart cherries.

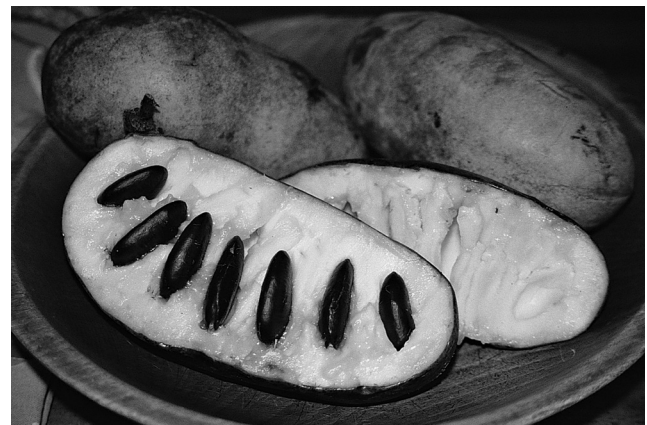


Fig. 6. Between the inedible seeds and skin lies the creamy, white flesh of pawpaw (*Asimina triloba*), the flavor of which has been likened to banana with hints of other tropical fruits, vanilla custard and crème brûlée.

handling the fruit to extend its relatively short shelf life. A number of varieties are now available from specialty nurseries.

Shipova

Shipova [\times *Sorbopyrus auricularis* (Knoop) Schneider, Rosaceae, Zone 4] is an intergeneric hybrid of European pear (*Pyrus communis*) and whitebeam (*Sorbus aria* L.). The fruit has been known in Europe for at least 400 years but has never been widely grown (Fig. 7). This robust tree exhibits natural good branch structure and bears flowers on spurs, each flower bud opening to large clusters of blossoms. The fruit has a delectable flavor, very pear-like, and a unique, meaty texture. Shipova is probably a triploid and sets reasonable crops without cross-pollination. The major limitation of this fruit is the tree's large size and the length of time to bearing. Shipova is typically grafted on pear but recent research suggests that rootstock choice (*Aronia* and dwarfing pear rootstocks are being tried) might solve both problems.

Hardy Kiwifruit

The final fruit highlighted is so-called hardy kiwifruit [*Actinidia arguta* (Siebold & Zucc.) Planch. ex Miq., Actinidiaceae, Zones 4–9], a cold hardy cousin of the fuzzy market kiwi (*Actinidia deliciosa*, Actinidiaceae, Zones 7–9). Although *A. arguta* is the most commercially viable of the “other” kiwis, *A. kolomikta* (Zones 3–7) also has some potential, its main limitation, as compared with *A. arguta*, being fruits that are smaller and that drop too readily when ripe. All *Actinidia* are vigorous vines bearing fruit in a similar manner as grapes. Commercial limitations of hardy kiwifruits are the same as for market kiwifruits, that is, separate male pollinator plants are needed as well as trellising, pruning more than once per year, and perfectly drained soil.



Fig. 7. Shipova (\times *Sorbopyrus auricularis*) fruits' sweet, perfumed flavor and chewy texture reflect their hybrid origin from European pear (*Pyrus communis*) and, probably, common whitebeam (*Sorbus aria*).



Fig. 8. Hardy kiwifruit (*Actinidia arguta*) fruits ripen in late summer and early fall with smooth, edible skin and flavor similar to, but generally sweeter and more aromatic, than market kiwifruit (*Actinidia deliciosa*).

That said, hardy kiwifruits are actually sweeter and more aromatic than market kiwifruits. Hardy kiwifruits are small, the size of large grapes, but have smooth, edible skins (Fig. 8). Hardy kiwifruits are very rich in Vitamin C. Commercially, hardy kiwifruits can get started in the market on the coattails of its larger, commercially established relative. Hardy kiwifruits do need a better market name; the few commercial growers of this fruit have been creative in this arena.

SUMMARY

American consumers are not so provincial as they were 30 years ago when all they wanted were shiny, red apples. Today's consumers are willing to try new fruits and want to experience new flavors. They also are interested in the healthful properties of foods. The uncommon fruits of this research satisfy these needs. Many of the fruits—blackcurrant, gumi, and hardy kiwifruit, as examples—are especially rich in health-promoting substances. All the fruits of this study have the advantage of requiring little or no pesticide sprays for pest control (Fig. 9). In the limited amount of test marketing thus far conducted by the author, these uncommon fruits have been enthusiastically received.

The fruits mentioned represent but a portion of the fruits under study. Others, such as *Hovenia dulcis* (Rhamnaceae), *Cudrania tricuspidata* (Moraceae) and *Morus nigra* (Moraceae) are suitable for home, but not commercial, production. For more complete discussions of the history, the cultivation, the harvest, and varieties of all these uncommon fruits, I refer you to my book on the subject, *Uncommon Fruits for Every Garden* (Timber Press, 2004).



Fig. 9. This bowlful of uncommon fruits that ripen in autumn show some of the possibilities that exist in uncommon fruits. All have good flavor and can generally be grown without pesticide sprays. Pictured are autumn olive (*Elaeagnus umbellata*), pawpaw (*Asimina triloba*), shipova (\times *Sorbopyrus auricularis*), che (*Cudrania tricuspidata*), and raisin tree (*Hovenia dulcis*).