

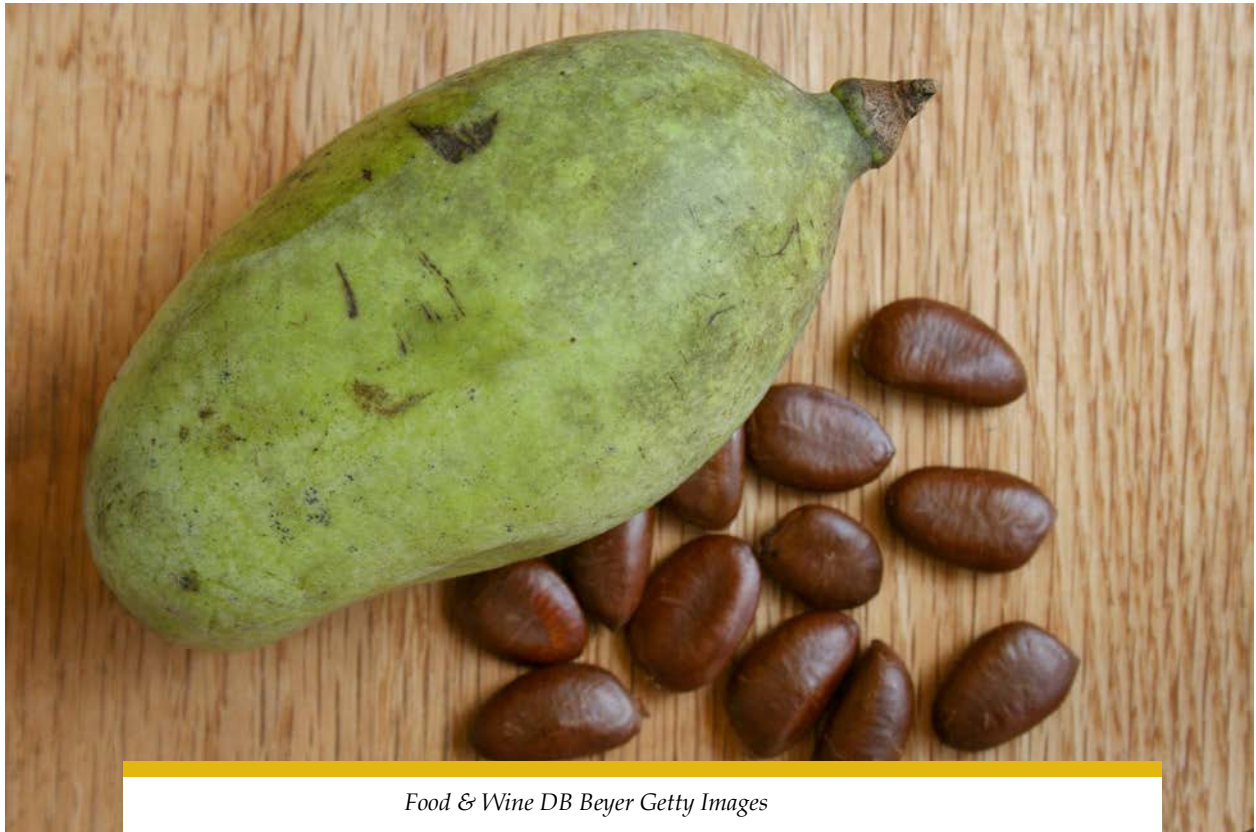
PAWPAW

Asimina triloba

Grow
Manage
Harvest

Cornell Cooperative Extension
Columbia and Greene Counties

Edible Upcountry,
photo by Brian
Kelley



Food & Wine DB Beyer Getty Images

Introduction to Pawpaws

Asimina triloba, the pawpaw, is often referred to as America's forgotten or lost fruit. This native woodland dwelling shrub has a range spanning nearly all eastern states and a rich history with deep ties to our country's culture. The story of the pawpaw is that of a true underdog with missed opportunities for the fruit to rise in popularity. For many reasons and circumstances, this fruit remains relatively unknown to the mainstream markets, but is gaining ground with the local food movement as well as with an increased emphasis on planting natives. Get ahead of this trend and consider introducing a native, edible plant to your woodland!

General Characteristics

Pawpaws are small deciduous trees that are hardy in Zones 5 to 8 and usually grow 15 to 20 feet tall (up to 40 feet under ideal conditions). They are attractive, with large, showy leaves and a pyramidal shape. Sometimes suckers form creating a pawpaw thicket.

Pawpaw flowers are maroon and inconspicuous, about 1.5 inches across, and appear in late May before the leaves expand. Depending on pollination, trees bear clusters of one to 6 fruit. The fruits are usually 4 to 6 inches long with thin green skin and whitish flesh.

Two unrelated Pawpaws are required for successful pollination. Hand pollination can increase fruiting, because bees show little interest in flowers. Flies can pollinate pawpaw flowers, so some growers hang pieces of rotting meat from the plants to attract them.

When ripe, fruits turn yellowish-black, resembling over-ripe bananas in looks, texture and somewhat in flavor. The flesh is rich and sweet with a custard consistency, very distinctive flavor, and many dark brown seeds about the size of lima beans. Fruits ripen from mid-September until frost. They are very perishable and considered too fragile for commercial handling. While usually eaten fresh, there are many culinary applications for this fruit.



A pawpaw thicket with ripe fruit. Photo by Tracey Testo

Growing Pawpaws

This relatively easy to grow plant does not require much once it gets started. Not much but years of patience, with an average of 8 years from seedling to fruit. In the meantime, while one waits to reap the fruits of their labor, the beauty and ecological benefits of this tree can be enjoyed.

Pawpaws, in their natural habitat are found under the canopy of a woodland, usually in rich bottomland soils near streams or rivers. When planting, try to choose a site that mimics the plants natural habitat. Rich, well-draining soils with a pH between 5.5 and 7 is preferred.

Seedlings benefit greatly by protection of shade as the young leaves are quite sensitive to direct sun. Once they have reached a few years in age, removing the shade and exposing the plant to full sun will result in a much more robust fruit crop. A grower then has a few options to meet this need. If the pawpaw is grown in a container for the first few years, the habitat can be adjusted by moving the plant. If the grower prefers to plant directly in the ground, the forest canopy can be simulated with shade cloth placed over the plant. Or, get creative by using a fence, structure, or other plants that will cast shade on the plant for its first few years. Once it has grown to a height that will surpass the shade, the plant will be hardy enough to receive full sun.

If you have decided to grow Pawpaws, you have a few options to get started- begin with a seed, consider grafting or purchase a plant from a nursery.



Young pawpaw under temporary shade provided by tomato cage and window screen. Photo by Guy K. Ames, NCAT.

Seed

Seeds can be sown in the fall to over-winter outdoors or can be stratified by exposing to cold temperature (32-40 degrees) for 90 to 120 days. This can be done by packing the seed in moist, not soaking wet, media in a bag and placed in the refrigerator through the winter months. Seed should never be allowed to dry out. After the stratification (exposure to cold) period is complete, the seeds can be planted in the ground or in containers. Since the seed coat is very thick, scarification is recommended to break the coat and speed up germination. Scarifying the pawpaw seed can be done a few ways. Soaking the seed overnight in water, creating a small cut in the seed coat with a knife or wrapping the seed in moist towels are all options to speed up germination. This is highly recommended in NYS due to our short growing season. Speeding up germination will allow for increased time to grow a seedling that will be healthy enough to survive the coming winter months.

If sowing seeds into containers, use deep pots or tubes to allow for healthy roots. As the winter approaches, these seedlings will need to be protected. They can



be left in pots and put in the ground with a pot in pot nursery technique or placed in a sheltered area packed with straw or some other insulating material. Transplanting in the fall from pot to ground is not recommended for Pawpaws. The seedlings can be grown out in their containers for a few seasons or transplanted to their permanent location in the spring. This seedling can be allowed to mature and express its genes or the grower can choose to graft a cutting onto that seedling for more predictable fruit.

A chip-budded pawpaw will have a "dog leg" where the bud was inserted. In two to three years, this feature will disappear and it will be difficult to tell where the bud or graft union was.
 Photo by Guy K. Ames, NCAT

Grafting

Very much like apples, and many other tree fruits, Pawpaws grown from seed do not exhibit the same traits as the tree the seed was collected from. As mentioned, two unrelated Pawpaws are required for pollinations and these mixed traits are unpredictably expressed as the seedling matures. Plant breeders have been developing cultivated varieties (cultivar) for decades - breeding for traits such as flavor, seed size, shelf life and time of ripening. If you buy a pawpaw seedling from a nursery, chances are it is a grafted tree. This means that a plant was grown from seed to serve as a root stock and then a cutting was taken from a desirable cultivar and was grafted onto that seedling. This explains why the price of a pawpaw from a nursery can seem expensive. Decades of plant breeding could have gone into that one cutting attached to the rootstock. If you have access to mature Pawpaws, a grower can make their own grafted tree by following these steps.

Year 1

- 1) Enjoy pawpaw fruit in the fall!
- 2) Collect seeds from that fruit.
- 3) Stratify the seed overwinter (follow instructions above)

Year 2

- 4) Grow out as container stock
- 5) During the next fall, sample pawpaw fruit. Make note of your favorite tree.
- 6) Overwinter your container stock

Year 3

- 7) Toward the end of winter, in late February or March, visit your favorite tree and collect branches. The size of the branches should match the size of the growth on your container stock.
- 8) Wrap the cutting(s) up and keep in the refrigerator until early spring
- 9) Once spring has arrived, and active growing begins on your seedling(s), attach your cuttings with a graft. Don't know how to graft? Here is a great resource to learn how- [Grafting and Budding Nursery Crop Plants, NC State Extension](#)

Do not let any buds below the graft grow as they will exhibit unknown characteristics from the seed.

Purchasing Seedlings

As mentioned, Pawpaws can be purchased from a nursery, generally as a grafted tree about 2-3 years in age. This is quite appealing considering the up to 8 year wait from seed to fruit. The nursery will likely provide a buyer with planting and care recommendations. Varieties for different growing zones are usually available. If growing in NYS, be sure to choose a cold hardy option.

Management and Care

When planting your Pawpaws, space the trees 5 to 8 feet apart. This plant has very few pests and diseases, but like any plant, spacing too closely will reduce airflow and can increase the likelihood of fungal or bacterial pathogens. If the trees are spaced too far apart (more than 8 feet) this will increase the need to hand pollinate as wind will be less dependable.

In the wild, Pawpaws will form thickets from suckers. Increased vegetative growth will result in reduced fruit production. This can be avoided with annual pruning in the winter. As a tree can reach up to 40 feet tall in ideal conditions, a grower may want to consider pruning the tree to keep the fruit in reach.



Deer rarely browse this plant so fencing is usually not necessary. Other mammals and most insects tend to avoid browsing on the Pawpaw as well. The tree is high in annonaceae acetogenins which function as a natural deterrent to most pests. This quality makes the tree an ideal candidate for organic production.

Young pawpaw tree. Photo by Department of Horticulture, Cornell University.

Ecological Benefits



Photograph by [Jerry F. Butler](#),
University of Florida.

As a native plant, the Pawpaw has evolved with our local ecosystem and because of that, is in harmony with our flora and fauna. Plants which are non-native have the potential to serve as competition. This plant can provide habitat to many insects but is particularly valuable to the Zebra Swallowtail butterfly as it is the only species that serves as a larval host. This relationship is comparable to that of Monarchs and Milkweed. The excess fruit of this plant (if there is any) is a great food source for mammals.

Harvesting

The fruit will ripen between September and your areas first frost. Ripening time can vary from plant to plant and from season to season. Some varieties of Pawpaws will have visual cues such as a shift in the color of the skin. For the most part, giving the fruit a gentle squeeze, feeling for a little give, is the best test to determine ripeness. If the fruit is harvested too soon, it will never reach its full potential of ripeness. Waiting too long will result in the fruit dropping from the tree and becoming bruised by its impact of the ground. This will considerably reduce the fruits already short shelf life. Once you have harvested your Pawpaws and they are at peak ripeness, they can be kept in the refrigerator for a week or two to extend their shelf life.



Harvesting. Photo by Tracey Testo

Culinary Uses

Arguably the best way to eat a pawpaw is with a spoon. Cut the ripe fruit open and enjoy, using care to eat around the seeds (which do have an element of toxicity). The seeds are large and easy to avoid. The culinary applications of this fruit are endless. Some of the most common uses are making a jam to spread on...anything, creating Pawpaw smoothies, and perhaps the most well-known use of making Pawpaw ice cream. Other more creative uses include Pawpaw beer, salsa, or bread. To preserve the harvest, the pulp of the fruit can be processed and frozen to enjoy later.



Processing Pawpaws. Photo by Tracey Testo, CCE Columbia Greene



Pawpaw butter. Photo by Tracey Testo, CCE Columbia Greene



Pawpaw butter. Photo by Tracey Testo, CCE Columbia Greene

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For more information, please visit:
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