Non-Timber Forest Products

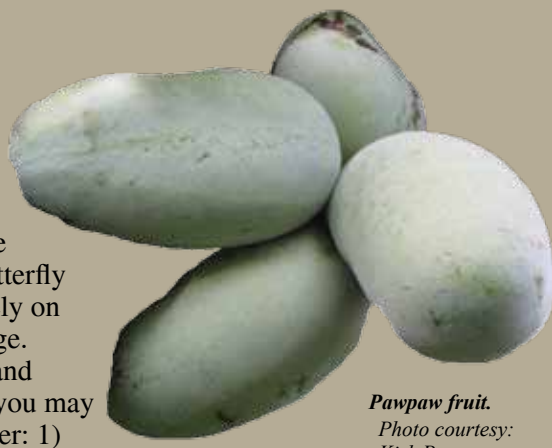
Forest Production of Pawpaws

by Kirk Pomper

"Where, oh where, is dear little Nellie? Way down yonder in the pawpaw patch."

This traditional American folk song was quite popular once, and fall hunting for pawpaws in the woods is still a cherished tradition for many families in Kentucky. In 1784, John Filson, an early settler of Kentucky, wrote that "the pappa-tree does not grow to a great size, is a soft wood, bears a fine fruit much like a cucumber in shape and size, and tastes sweet." In 1806, Lewis and Clark recorded in their journal how pawpaws helped save them from starvation. Daniel Boone and Mark Twain were pawpaw fans.

Recently, interest in pawpaws has grown significantly. In 1990, Kentucky State University (KSU) began a research program with the aim of developing pawpaws as a new tree-fruit crop for Kentucky. With a unique mango, banana, and pineapple flavor, and a tropical-like aroma, pawpaw fruit has fresh market appeal for farmers' markets and direct sales to restaurants, as well as processing potential for the orange-yellow pulp for use in gourmet items such as ice cream, wine, and pies.



Pawpaw fruit. *Photo courtesy: Kirk Pomper*

Pawpaws prefer moist habitats and often grow in patches near coves and streams. *Photo courtesy: Kirk Pomper*

Pawpaws are found throughout Kentucky's forests as a native understory tree, often along streams and rivers. Pawpaw trees produce root suckers and can form large patches of over 500 stems. Patches serve an important role in ecosystems around streams and rivers and for fruit production for animals, erosion control, and enhancing insect biodiversity. The zebra swallowtail butterfly larvae feed exclusively on young pawpaw foliage.

If you are a woodland owner in Kentucky, you may want to consider either: 1) planting pawpaw seedlings to assist in erosion control, attract wildlife, and diversify your current woodlands area, or 2) planting grafted pawpaw varieties in an orchard adjoining your current woodland area or timber planting.

Site Selection

For a woodland planting site, pawpaws will thrive in areas with well-drained soils that are often moist, especially near streams, but that are not frequently waterlogged. Pawpaw orchards should be planted in well-drained soils and areas east of woodlands or timber plantings that will serve as windbreaks for the orchard. Pawpaws will grow in shaded areas; however, fruit production will be greatest in areas of full sun. Fruit set can be low in native patches due to shading, lack of pollinators (flies), and failure of cross pollination (which requires at least two genetically different pawpaw trees). Low areas in valleys have poor air drainage, and pooling of cold air can lead to spring frost damage to pawpaw flowers in April and May that can cause crop failure.

Plant Material and Planting Time

Use pawpaw seedlings in woodland areas where they can spread by root suckering. Remember that the seedlings are not identical to their parents, and fruit quality cannot be guaranteed. Fruit may be of high or poor quality. Seedlings must undergo a period of juvenility and will flower four to eight years after planting. Pawpaw seed can be removed

The flower of Pawpaw is unusual in that it is pollinated by flies.

Photo courtesy: Jeremy Lowe

from fruit, washed in a dilute bleach solution (5%), and be stored in zipper-top bags with moist peat moss. Bags should be kept in the refrigerator for at least three months (stratification), or until planting, to satisfy the seed chilling requirement. Never let pawpaw seed dry out or freeze; this will kill the seed. If sowing into containers, use a peat-based potting soil and tall pots to accommodate the strong taproot. Root suckers in native patches usually have poorly developed root systems and can rarely be transplanted successfully. In orchards, space trees eight feet apart within rows and 18 feet between rows; woodland-planted trees should be no farther than 100 feet apart.

For fruit production in orchards that adjoin woodland areas, purchase named pawpaw varieties that have been grafted or budded onto seedling rootstock. Grafted or budded trees produce high-quality fruit three to five years after planting. The pawpaw varieties Sunflower, Overleese, NC-1, Shenandoah, Wabash, and KSU8-2 are recommended for planting based on Kentucky trials. Root suckers from grafted trees will not be true to the variety and should be removed. Spring planting (April-May) has been more successful in Kentucky than fall planting.

The Kentucky Division of Forestry is selling seedlings to the public that have been grown from high-quality KSU pawpaw seed. For more information, go to www.forestry.ky.gov/seedling.

Early Care and Establishment

Newly planted pawpaw trees do not compete well with grass, weeds, or other plants. Place straw or woodchip mulch at six to eight inches in depth extending out at least three feet from the trunk to control weeds and retain moisture. Water and fertilize the trees, especially during the first two years of establishment.

The "Wabash" pawpaw is one of several improved varieties recommended for planting based on Kentucky trials.

Photo courtesy Jeremy Lowe

Harvest

Depending on the variety, fruits ripen in late August to early October. Fruits ripen on the same tree over about a two-week period, which reflects the extended spring flowering period. Pawpaw fruit are ripe when they begin to soften and can be gently pulled off a tree in a manner similar to ripe peaches. Fruit have a five- to seven-day shelf life at room temperature; however, fruit can be stored under refrigeration for up to three weeks to maintain a good eating quality.

Economics

In 2009, pawpaw fruit usually sold for $1 each (about $2 per pound) at farmers' markets and up to $3 per pound at specialty groceries in Kentucky. Grafted varieties will come into full production by the sixth year after planting and produce 50 to 75 pounds of fruit per tree each year. Seedling trees usually have lower yields, and fruit quality can be low (e.g., small fruit, bitter aftertaste).

Web Site References

- The Kentucky State University Pawpaw Web site: www.pawpaw.kysu.edu
- The Kentucky Division of Forestry pawpaw seedling order form: www.forestry.ky.gov/seedling
- The KSU Pawpaw Nurseries List: www.pawpaw.kysu.edu/pawpaw/nurslst.htm

About the Author:

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