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Forest Production of Pawpaw

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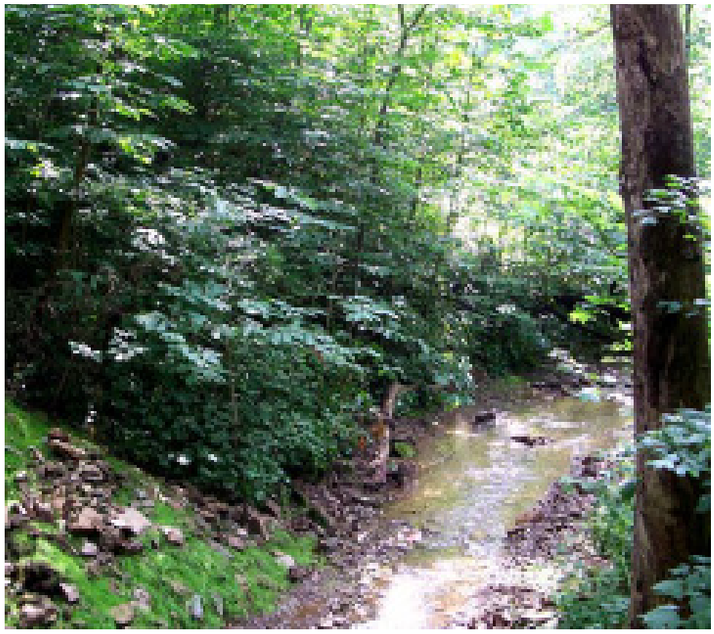
Introduction

"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 1990, Kentucky State University (KYSU) began a research program with the aim of developing pawpaw as a new tree-fruit crop for Kentucky. With a unique mango, banana, and pineapple flavor, and a tropical fruit-like aroma, this fruit has fresh market appeal for farmers' markets and direct sales to restaurants, and processing potential for the orange-yellow pulp to be used as an ingredient in gourmet items such as ice cream, wine, and pies. Pawpaws are found throughout Kentucky's forests as a native understory tree, often along streams and rivers. The trees produce root suckers, forming large patches of often over 500 stems. Patches serve an important role in ecosystems around rivers and streams, providing fruit and cover for animals (deer, raccoons, squirrels, etc.), reducing erosion, and enhancing insect biodiversity. Zebra swallowtail butterfly larvae feed exclusively on 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.



Native pawpaw patch near stream.

Site Selection

For a woodland planting site, pawpaws will thrive in areas with well-drained soils that are often moist, especially near streams, but are not frequently waterlogged. Pawpaw orchards should be planted in well-drained soils in areas near woodlands or timber plantings which 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 and 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 quality or poor quality. Seedling trees must undergo a period of juvenility; therefore, seedlings will flower 4-8 years after planting. Pawpaw seed can be removed from wild-collected or cultivated fruit, washed in a dilute bleach solution (5%), and be placed in ziplock bags with moist peat moss for storage.

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. The Kentucky Division of Forestry sells seedlings to the public that have been grown from high-quality KYSU pawpaw seed (www.forestry.ky.gov/seedling). Root suckers in native patches usually have poorly developed root systems and are difficult to transplant. In orchards, space trees 8 feet apart within rows and 18 feet between rows to promote pollination. Woodland planted trees should be planted 8 to 100 feet apart to optimize pollination and spread of root suckers.

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 3 to 5 years after planting. The pawpaw varieties 'Sunflower', 'Overleese', 'NC-1', 'Wabash', 'Shenandoah', 'Potomac', 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.

Early Care and Establishment

Newly planted pawpaw trees do not compete well with grass, weeds, or other plants. Place straw or woodchip mulch at 6-8 inches in depth extending out at least 3 feet from the trunk to control weeds and retain moisture. Water and fertilize the trees, especially during the first 2 years of establishment.

Pawpaw trees flower in the spring and fruit in the fall.

Harvest

Depending on the variety, fruit ripen in late-August to early-October. Fruit ripen on the same tree over about a 2-week period, due to an extended spring flowering period. Pawpaw fruit are ripe when they begin to soften and can be gently pulled off a tree like ripe peaches. Fruit can also be cut from the tree at the stem (peduncle) with a pruning shears to reduce tearing of the skin and fruit injury. Fruit has a 5-7 day shelf-life at room temperature and up to 3 weeks in the refrigerator.

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 6th year after planting and produce 50-75 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).

Learn more:

www.kysu.edu/pawpaw
Seedling order form: www.forestry.ky.gov/seedling
Nurseries list: www.pawpaw.kysu.edu/pawpaw/nurslst.htm
Email: sheri.crabtree@kysu.edu

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