Organic Pawpaw Production

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The North American Pawpaw

- *Asimina triloba* (L.) Dunal.
- Slow growing, moderate sized tree; pyramidal in full sun
- Fruit:
  - Clusters of 1-13 fruit
  - Fruit up to 2 lbs.
Pawpaws in the Wild

- *A. triloba* is usually found in the forest understory in hardwood forests
- Clonal reproduction by root suckering
- You may not find many fruit (shade, self-incompatibility, lack of pollinators)
Pawpaw Flowering and Harvest

- Flowers: male and female parts in a flower
- Cross-pollinate (self-fruitful?)
- Pollinated by flies and beetles
- Ripe fruit-soft
- Color change not a reliable indicator of ripeness
- Harvest from the same tree over several weeks
The Pawpaw Fruit

- Tropical-like flavor and aroma
  - banana, mango, and pineapple
- Nutritious and high in antioxidant activity
- blended fruit drinks, ice creams, yogurt, etc.
Pawpaw Market Potential

- Farmers Markets
  - Fruit: $1 each
  - $2 to $3/pound
- Gourmet Market
  - Frozen pulp
  - Ice cream
- Restaurants

K. Pomper
Welcome to the homepage of Kentucky State University’s Organic Agriculture Working Group. The group brings together KSU researchers, teachers, and extension staff whose work relates to organic agriculture. We are a diverse group, with a broad range of ideas and expertise. By working together, we try to approach problems holistically, according to the ideals of organic agriculture.

Mission

The KSU Organic Working Group seeks to develop, evaluate, and demonstrate socially, economically, and environmentally sustainable agricultural systems compatible with National Organic Program standards and suitable for adoption by Kentucky’s small farmers and gardeners.

"These questions are complex [...] For their solution they manifestly require every aid that a wide knowledge of science can give."

--Sir Albert Howard,
Father of Organic Agriculture, 1924
POURPOSE

OAK is a member-driven nonprofit organization. Members work together to:
- Promote Kentucky's organic farms and farmers
- Share information with one another
- Guide research programs related to organic agriculture
- Educate consumers about organic food and farm products.

Membership is open to anybody willing to adhere to OAK's [Constitution and Bylaws](#) and does not require or imply certification under the USDA's [National Organic Program](#) standards.

MISSION

OAK promotes organic production and consumption in Kentucky as part of a food and farming system that strengthens communities by being economically viable and environmentally sound.

FORMATION

During 2009, OAK's formation was guided by a steering committee of producers, consumers, and retailers from across Kentucky with a shared interest in organic agriculture. The organization had its inaugural meeting and elected its first board.
Organic Pawpaw Production

- See handout

The main problems:
- Weed control
- Nutrient management
- Disease and pest control
Organic Pawpaw Production

■ Site selection:
  ■ Air drainage (avoid frost pockets)
  ■ Deep, fertile, well-drained soil, pH 5.5-7.0
  ■ Weed control before planting
    ■ Repeated tillage
    ■ Solarization
  ■ Water source for irrigation
  ■ Records on farm activity (3 yrs to certify)
Pawpaw Cultivars

- Pawpaws - not true to seed
- Seedlings take several years longer to flower and fruit than grafted trees
- Recommended Grafted (named) cultivars
- No organic nursery sources
Field Planting Pawpaw

- 8’ between trees, 18’ between rows
- 295 trees/ac
- Tree seldom grow taller than 25 feet
Why control weeds in orchards?

- Weed management in orchards:
  - Reduced competition
  - Nutrient management
  - Irrigation and water management
  - Rodent management

- Pawpaw weed control
  - Straw or hay/wood chips
  - Weed badger
  - Flame cultivation
Weed Control

Weed badger at UK

Untrolled round hay bale at KSU
Weed Control

- Flame cultivation uses a torch-directed flame to kill weeds, and the flame sears the weeds causing the plant cells to rupture.
- Flame cultivation or weeding offers an organic alternative to herbicide use for control of grass and perennial weeds.
- Works for several weeks
Last flaming on August 18, photo taken on August 25, 2006
Nutrient management in Pawpaw

- Growth: 16 to 24 inches/year
- Feather, meat, and bone and blood meal (e.g. 10-2-8 from NatureSafe®) broadcast under trees in early spring at 1 to 2 oz/tree.
- Compost is difficult to incorporate if woodchip or straw mulch is used around trees for weed control.
- Legume cover crops in alleyways can help provide additional nitrogen to trees.
  - Help in rotation
- Growers should conduct a foliar analysis in July to monitor your fertilization program.
Pawpaw Pests and Diseases

- Leaf and fruit spot (*Phyllosticta*)
- Japanese beetles
- Leaf rollers
- Zebra swallowtail butterfly - not necessarily a pest
- *Talponia plummeriana* - pawpaw peduncle borer
The Potential of Pawpaw

- Fresh market-unique flavor
- Appearance-not unappealing
- Post harvest handling issues
  - Bruising
  - Short shelf-life of about 7 days at room temp
  - Storage for 2-3 wks under refrigeration
The Potential of Pawpaw Processing pulp

- Hand processing
- Labor intensive
- Regulations on how to process and where pulp can be sold

pawpaw.kysu provides information on how to grow and use fruit from the North American pawpaw tree.

Over 300,000 visitors since 2003!
Questions?