

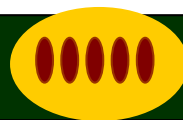


LAND GRANT PROGRAM

All About Pawpaws

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Kentucky State University
Land Grant Program



What is a Pawpaw?

- *Asimina triloba*
- Custard apple family
- Slow growing, moderate sized tree; pyramidal in full sun
- Fruit:
 - Clusters of ~2-5 fruit
 - Fruit ½ - 1 lb.



K. Pomper

Pawpaw Fruit

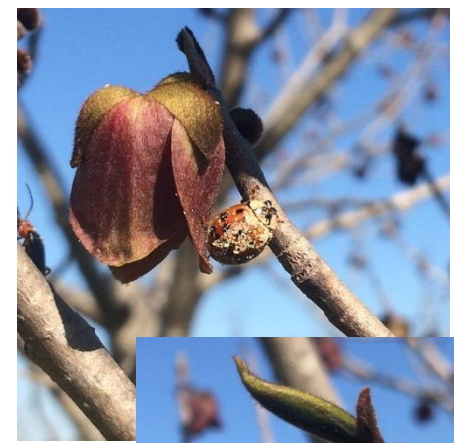
- Tropical flavor and aroma
 - banana, mango, and pineapple
- Soft custard or avocado-like texture
- Nutritious, high in vitamins, minerals, antioxidants



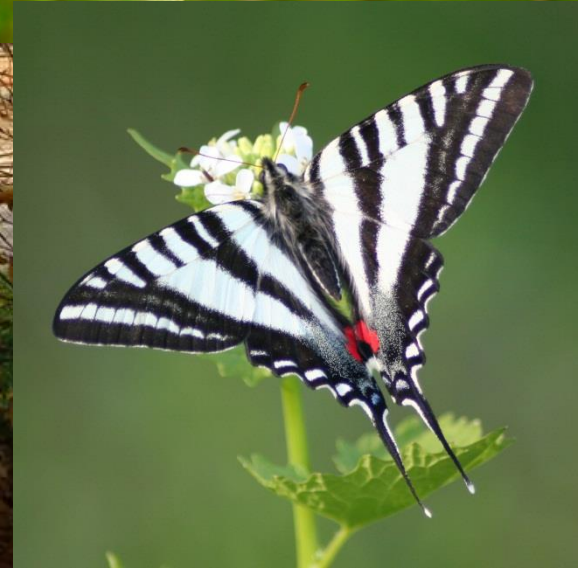
Zimmerman

Pawpaw Flowering

- Flowers April-May in KY
- Both male and female parts in a flower
- Cross-pollination - plant at least two trees for good fruit set
- Recently found to be somewhat self-fruitful (graduate student study: both Sunflower and Susquehanna self fruitful, Susquehanna more than Sunflower); cross pollination dominant over self pollination
- Pollinated by flies and beetles



Pawpaw in Landscapes





Native range of pawpaw



Pawpaw can be grown in USDA
growing zones 5-9
Chill hours being investigated but
reported to require ~400

Pawpaws in the Wild



- Usually found in the understory of hardwood forests
- Clonal reproduction by root suckering
- Often do not produce many fruit (shade, self-incompatibility, lack of pollinators), fruit may be poor quality

Managing Wild Pawpaw Patches

- Thin out patch to strongest trees, ~8 feet apart
- Prune or clear out surrounding trees shading the pawpaws to allow more light in
- Clear out competing underbrush
- Plant additional seedlings from other source or grafted trees for increased diversity and cross-pollination
- Can graft wild trees if fruit is poor quality
- Difficult to transplant root suckers

Establishing a Pawpaw Orchard

Site selection:

Air drainage (avoid frost pockets)

- Deep, fertile, well-drained soil, pH 5.5-7.0

- Weed control – mulch, mechanical, glyphosate

- Irrigation/ water source- especially in first 2 years after planting. 1" rain per week min.

- Soil test before planting



Establishing a Pawpaw Orchard

- Pawpaw will fruit in the shade, optimum yields are obtained in full sun
- 8-10' between trees- no more than 30', 18-20' between rows
- Spring planting best
- Fertilization: Nitrogen- urea or organic (such as NatureSafe)
1-3 oz N /tree first years; 4-5 oz later- stop application by August 1



Maintaining a pawpaw orchard



Pruning- central leader vs minimal pruning

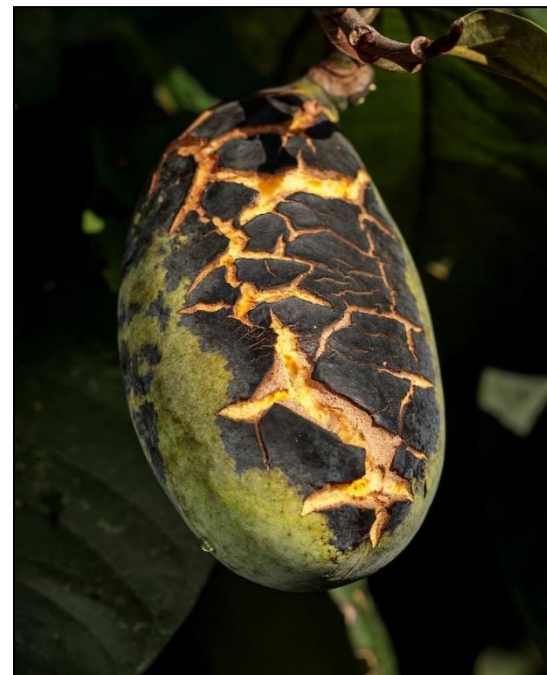
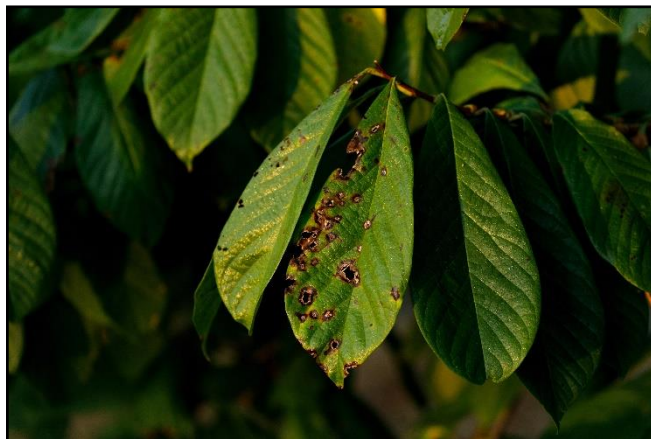
- Stronger trees, Easier to pick, sunburn not a problem
- Slower to come into production, lower yield, more labor



Paint trunks white (50/50 latex paint and water) to prevent trunk cracking (southwest injury)

Phyllosticta – Fungal Leaf Spot

Graduate student study: Sulfur (Safer®) or copper (Cueva®) to control- minimal success; Mankocide® (mancozeb+copper hydroxide) looks promising this year;
Some cultivars more resistant: Susquehanna less fruit spot than Sunflower



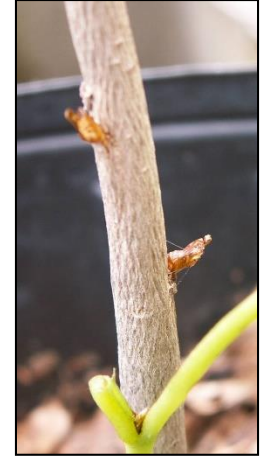
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Ompalocera munroei –
Asimina Webworm Moth

Remove nests and destroy, spinosad, Bt



Talponia plummeriana - Pawpaw
Peduncle Borer: generally low
numbers



Dolba Hyloeus - Pawpaw Sphinx



Popillia japonica - Japanese Beetle
Pawpaw not preferred



Four-legged Pests

- Raccoons
- Opossums
- Will eat fruit on the ground and in trees
- Whitetail Deer
 - Don't usually feed on leaves or fruit
 - Bucks love to rub their antlers on pawpaws
- Electric fencing, hand harvest to beat animals to the fruit



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Pawpaw Propagation by seed

- Producing trees from seed:
- Seed requires stratification (3 months of refrigeration)
 - Desiccation sensitive (do not dry out)
 - Seed is killed by freezing
- Many nurseries grow pawpaw seedlings in containers
- Deep pots for taproot
- Not true to type from seed-variable, possibly poor quality
- 7-8 years to produce fruit from seed



Pawpaw Propagation by grafting

- Graft or bud onto seedlings in containers or in the field
- Chip bud, whip and tongue, cleft grafts, grafting tool
- T-budding not recommended
- Top working existing older trees- bark inlay
- Grafted trees take 3-4 years to fruit



KSU-Atwood™

- Fruit weight: 120 g
- Number of fruit/tree: 150
- Mild mango flavor
- Available from licensed nurseries



KSU-Benson™

- Fruit weight: 180 g
- Number of fruit/tree: 120
- Round Shape
- Excellent flavor
- Available from licensed nurseries



■ KSU-Chappell™

- mid-season ripening
- vigorous and high-yielding
- Fruit weight: 250 grams
- Creamy, sweet, mild banana-pineapple flavor with floral notes
- low seed (5% seed by weight)

GROWING
for the
FUTURE


Kentucky State University
Land Grant Program
is excited to release
its third pawpaw cultivar

KSU-CHAPPELL™

Join us for our Third Thursday Thing on pawpaw on Thursday, Sept. 20, 2018
for a special dedication ceremony with Dr. Lucy Lang-Chappell and her family.

SEPT. 20
10 A.M. - 3 P.M.

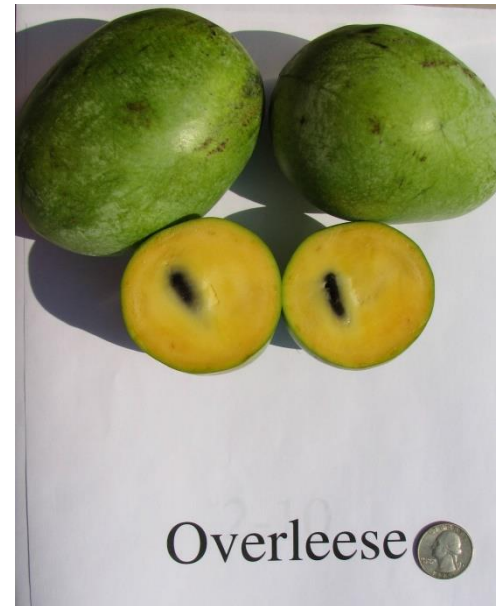
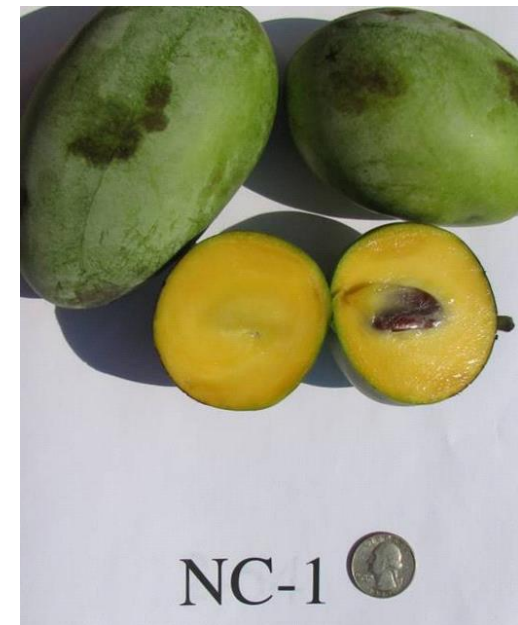
BENSON FARM
1525 MILLS LN.
FRANKFORT



KENTUCKY
STATE
UNIVERSITY
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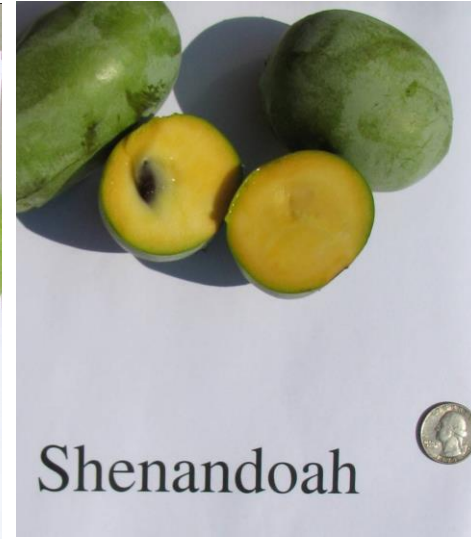
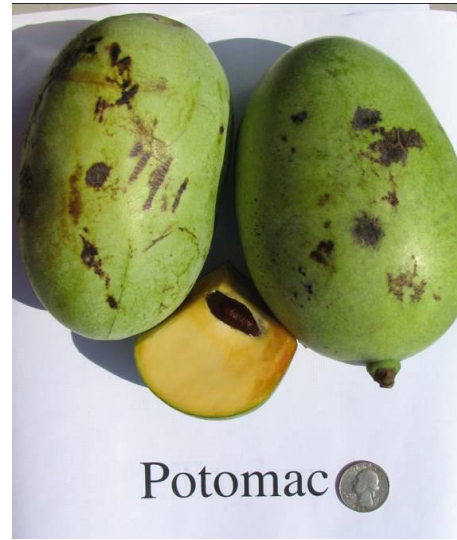
Recommended cultivars

- NC-1: average fruit weight: 180 g, Number of fruit/tree: 45
- Overleese: 170g, 55 fruit/tree, melon flavor
- Sunflower: 155g, 74 fruit/tree, mild flavor



Peterson Pawpaws

- Potomac: 235 g, 44 fruit/tree, very large
- Shenandoah: 155g, 80 fruit/tree, mild flavor
- Wabash: 185g, 65 fruit/tree, round fruit
- Susquehanna, 184g, 39 fruit/tree, frequent taste test winner



Kentucky and Indiana Nurseries selling pawpaw trees

- England's Orchard and Nursery, McKee, KY www.nuttrees.net 606-965-2228
- Peaceful Heritage Nursery, Stanford, KY www.peacefulheritage.com 606-355-7242
- Oakland Farm Trees, Paris, KY oaklandfarmtrees.com (859) 361 - 8474
- Kentucky Division of Forestry state nurseries <https://eec.ky.gov/Natural-Resources/Forestry/state-nuseries-and-tree-seedlings/Pages/default.aspx>
- Indiana Berry & Plant Co. Plymouth, IN 1.800.295.2226 www.indianaberry.com
- Brambleberry Farm <http://www.brambleberryfarm.org/> Paoli, IN [812-666-6077](tel:812-666-6077)
- Indiana Division of Forestry <https://www.in.gov/dnr/forestry/tree-seedling-nurseries/> 812-358-3621

Pawpaw harvest

- Skin color is not an indicator of ripeness- often green when ripe
- Fruit may be picked when slightly soft and fruit pulls away easily from the tree
- Fruit will drop when ripe
- Ripe fruit bruises easily- handle with care
- Harvest from the same tree over several weeks
- Harvest late August-late September in KY



Postharvest

- Fully ripe fruit have a shelf life of just 2-3 days
- Fruit may be picked when just beginning to soften and stored in the refrigerator for ~2 weeks, then brought out to fully ripen at room temp
- Processing and freezing pulp allows longer term



Processing pulp manually for freezing

- Avoid bruised or discolored fruit
- Skin is bitter, seeds are inedible
 - Small scale- Can use colanders or mesh bags



Roma Food Processor with Grape Spiral with Pumpkin Screen



Markets for Pawpaw

- Fresh market- farmers markets and local produce markets- \$2-4/ lb (\$1.50-2.50 /lb wholesale; \$3-5+/lb retail)
- Online/mail order sales- \$10+ per pound
- Value-added products
- Restaurants, wineries, breweries



Value-added Products: Pawpaw spirits

- Beer
- Wine
- Brandy, moonshine



Baked goods

- Cakes, Cookies, Bread
- Pie, Custard, Crème brûlée, Pudding
- Most recipes containing banana can be substituted with an equal amount of pawpaw pulp.



Hot sauces and salsa

- Substitute pawpaw in fruit salsa recipes containing mango, papaya, peach, or pineapple
- Pawpaw barbeque sauce and hot sauce



Pawpaw ice cream

- KSU Pawpaw Ice Cream recipe:
 - 1.5-2 cups pawpaw pulp
 - 4 cups milk
 - 4 cups cream
 - 3 cups sugar
 - Mix well and freeze in ice cream freezer
- Pawpaw pulp can also be blended with yogurt, or used in a fruit smoothie



Pawpaw jam

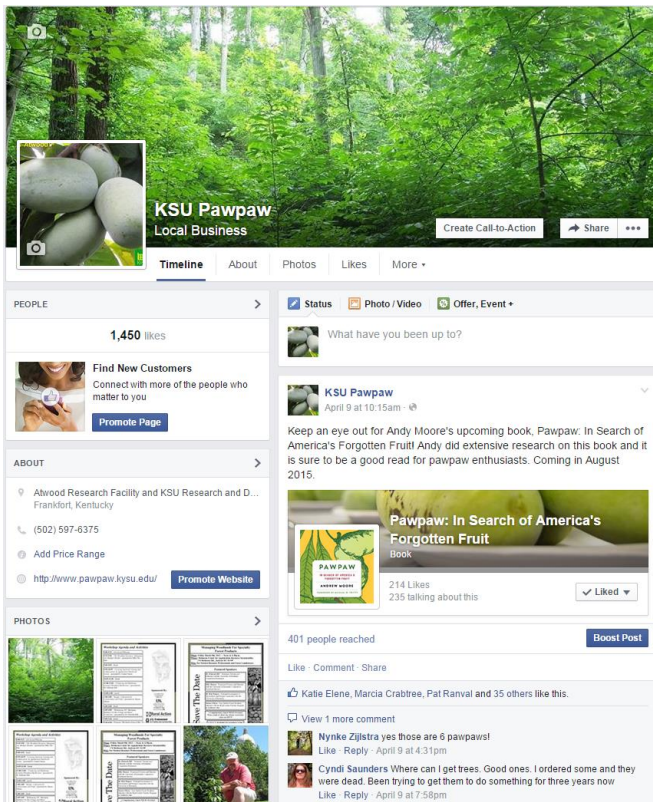
- 6 cups pawpaw puree
- 4 cups sugar
- One packet pectin
- 1.5 tsp fruit fresh
- Simmer pawpaw puree on stovetop, slowly adding sugar. Simmer and stir for 8 minutes. Add pectin, bring to boil, and turn off heat. Pour into sterilized jars and place in hot water bath for 10 minutes.



Online and Social Media:

<https://www.kysu.edu/academics/college-ac/school-of-ace/pawpaw/>

Facebook: KSU Pawpaw YouTube: KSUPawpaw
Pawpaw Third Thursday Thing September 15, 2022



The image shows the Facebook profile of 'KSU Pawpaw Local Business'. The cover photo is a lush green forest scene. The profile picture shows several green pawpaw fruits. The page has 1,450 likes. A recent post from 'KSU Pawpaw' dated April 9 at 10:15am features a book titled 'Pawpaw: In Search of America's Forgotten Fruit' by Andy Moore. The post text says: 'Keep an eye out for Andy Moore's upcoming book, Pawpaw: In Search of America's Forgotten Fruit! Andy did extensive research on this book and it is sure to be a good read for pawpaw enthusiasts. Coming in August 2015.' Below the post, there are comments from Nynke Zijlstra and Cyndi Saunders.



The image shows the website for the KSU Pawpaw Program. The header features the Kentucky State University logo and the text 'pawpaw.kysu'. The main content area is divided into two columns. The left column contains a navigation menu with links: Welcome, KSU Pawpaw On Facebook!, Licensed Propagators for KSU Trademarked Pawpaw Cultivars, Personnel, Growing Information, Recipes and Uses, Reports and Presentations, Other KSU Information and Links, Calendar of Events, FAQ and Contact Information, KSU Home Page, and Masters of Environmental Studies. The right column features a large photo of a pawpaw orchard in the snow, with the caption 'KSU Pawpaw Orchard in the snow. Photograph by Kirk Fomper'. Below the photo, it says 'pawpaw.kysu provides information on how to grow and use fruit from the North American pawpaw tree.' Further down, there is a section titled 'KSU Pawpaw Program' which describes the fruit and the university's research efforts. On the far right, there is a 'Pawpaw News' section with several news links.



Questions?