ORGANIC PRODUCTION OF NATIVE AND NICHE FRUIT CROPS

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Persimmons, the Apples of Asia
By Brian Barth on February 23, 2015

Diospyros, which translates roughly as ‘fruit of the gods’ in Greek, was a worthy choice as the botanical name for persimmon trees. The fruit has the perfect combination of crispness and juiciness. It’s sweet, but not cloyingly so, leaving a bright, clean aftertaste on the palate.

Persimmons come in an astonishing number of unique varieties, ranging from yellow to nearly maroon. There are more oval-shaped persimmons, round varieties, bony ones and some that look like apples. In fact, there are more than 1,000 varieties in the Asian ornocarpa.
**Emerging Market Opportunities**

- Late-season, High-value Product
- Artisanal Flavors
- Local
- Organic
- These crops have stories

- Direct Marketing
  - Local Restaurants
  - Farmers Markets
  - CSAs
  - Immigrant/Ethnic Communities

- Food Hubs
- Agritourism
  - Pick your own

- Value added products
  - Jams, jellies, ice cream, spirits, pastries, etc.
# Fruits Well-Adapted to Our Area with Few Serious Pest and Disease Problems

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VARIETY SELECTION

- Marketing Considerations
  - Harvest Range (early-, mid-, late-season)
  - Fruit Qualities (flavor, shelf life, sugar content, etc.)
  - Use (fresh, processing, juicing, etc.)
- Insect and Disease Resistance
- Adaptation to Local Environment/Climate
- Maintenance Requirements
HARVEST SCHEDULE

Persimmon
Pomegranate
Pawpaw
Muscadine
Fig

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SHORT STORAGE AND SHIPPING LIFE

- Limits these crops to local markets
- Increases demand
- Opens processing potential (value-added)
**PURCHASING PLANTS**

- Order from specialty nurseries
- Order well in advance of preferred planting date
- Bareroot or container-grown are ok for most
- Have soil prepared and ready to plant when they arrive
PLANTING

- Varies somewhat by species.
- Plant in fall/winter.
- Break up rootballs on containerized plants.
- Don’t plant too deep!
- Water well after planting.
PEST MANAGEMENT

 Select resistant varieties
 Keep plant healthy
 Preserve natural enemies
 Sanitation
 Use pesticides (organic or otherwise) as last resort
WEED MANAGEMENT

- Mulching
  - Natural
  - Plastic
  - Weed barrier
- Groundcovers
This field is Certified Organic by Quality Certification Services
Muscadine Grapes (Muscadinia rotundifolia)

- Native “grape”
- Best adapted grape to Southeast
- High nutritional value
- Multiple uses (fresh, juice, wine, preserved)
- Ripen early-August to mid-October
Muscadine Cultivar Selection

Two Flowering Types
- Pistillate (female flowers) and Perfect (male & female flowers).
- Pistillate cultivars require perfect-flowered cultivars for pollinization.

Fresh vs. Juicing Types

Stem Scars
- Wet vs. Dry
- For shipping/storing select cultivars that produce a higher percentage of berries with dry stem scars.
MUSCADINE CULTIVAR SELECTION

- Black, Bronze (Scuppernong), or Red types
- Female cultivars have higher quality fruit
- Wide harvest range
- A couple seedless varieties available

http://www.caes.uga.edu/commodities/fruits/muscadines/cultivars/index.html
MUSCADINE CULTIVATION TIPS

- Grow on a single wire trellis for maximum production and ease of maintenance
- Space vines 20 ft apart in row
- Interplant perfect flowered cultivars
  - Every 4th row
  - Or every third plant in row.
- Requires annual pruning and training
- Fruit picked individually, not in clusters
SINGLE WIRE TRELLIS PREFERRED
MUSCADINE

Upside
- Nutritional qualities
- “Southern” flavor
- High yields
- Multiple product options
- Few pests

Downside
- Must be trained
- Needs annual pruning
- Can be overly vigorous
PAWPAW

(ASIMINA TRILOBA)

- Largest edible fruit native to US
- Staple food for Native Americans and early Europeans and Africans
- Virtually unknown to modern Americans
- More nutritionally dense than apples, bananas or oranges
- Ripens August/September
CULTIVAR SELECTION

- Grafted cultivars preferred over seedlings
  - Yield earlier
  - Higher-quality fruit

- Cultivars
  - PA-Golden, Shenandoah, Sunflower, Rappahannock, Potomac, Wabash, KSU-Atwood
Introduction
The North American pawpaw is in the early stages of commercial production. Many people are interested in growing and marketing pawpaws organically. The ripe fruit has a strong, appealing aroma and an orange to yellow pulp with a flavor that is similar to a blend of mango, pineapple, and banana. Pawpaws are hardy to USDA growing zone 5 and when planted in full sun in an orchard setting, trees can produce large quantities of fruit. Based on variety trials at Kentucky State University (KSU) there are a number of large fruited, grafted (named) cultivars that can be recommended for growers in Kentucky including: ‘KSU-Atwood™’, ‘Sunflower’, ‘Overleese’, ‘NC-1’, ‘Susquehanna™’, ‘Potomac™’, ‘Wabash™’, and ‘Shenandoah™’. 
Pawpaw Cultivation Tips

- Require 2 different cultivars for cross-pollination
- Provide shade during establishment
- Space 8 ft in the row
- Irrigation beneficial
- Mulch with straw prior to fruit ripening
- Tap rooted – doesn’t transplant well
- Container – nursery-grown best
- Drought/flooding sensitive
GROW TUBES
Pawpaw

**Upside**
- Rare in commerce
- Unique flavors
- Few pest problems
- Minimal pruning

**Downside**
- Tends to sucker
- Drought tolerant, but irrigation helps
- Phyllosticta fungal spot
Native Persimmon
(Diospyros virginiana)

- Diospyros = “Fruit of the gods”
- Common native tree
- Ripen October (into November?)
PERSIMMON CULTIVAR SELECTION

- Grafted cultivars preferred over seedlings
  - Yield earlier
  - Higher-quality fruit

- Cultivars
  - Early Golden, Golden Supreme, Garrettson, John Rick, Meader, Szukis, Geneva Long
PERSIMMON CULTIVATION TIPS

- Dioecious – trees are male or female
  - Require both for pollination
- Trees will get large (20-30 ft. at least!)
- Astringency – must wait until soft ripe to harvest/eat
NATIVE PERSIMMON

Upside
- Common native fruit
- Foraging potential
- Attractive to a wide range of wildlife

Downside
- Astringency
- Fruit seedy
- Tree gets large
- Attractive to a wide range of wildlife
- Somewhat difficult to harvest
Asian Persimmon (*Diospyros kaki*)

- As popular (and common) in Asia as apples are here.
- Trees may get large (20-30 ft.), but are slow growing.
- Lots of potential
- Fruit nearly seedless
- Ripen in October
ASIAN PERSIMMON CULTIVAR SELECTION

- Non-astringent cultivars – may be eaten firm or soft
  - Fuyu, Giant Hanafuyu, Ichikikeijiro (Jiro), Izu

- Astringent cultivars must be soft-ripe to eat:
  - Hachiya, Sheng, Yamoto, Smith’s Best, Hao River
Asian Persimmon Cultivar Selection

- American-Asian Hybrids – combine traits of both. Generally more cold-tolerant. Astringent
  - Nikitas Gift, Prok, Rosseyanka

- Cultivars grafted onto native persimmon rootstock preferred
  - More cold hardy
  - Yield earlier
  - More disease tolerant
Asian Persimmon Cultivation Tips

- Do not need cross-pollination to set fruit
- May be damaged by temperatures below 10°C F
- Require fruit thinning
Asian Persimmon

Upside
- High value fruit
- Somewhat rare in commerce (especially local-grown)
- Slow growing
- Fairly drought tolerant
- “Pumpkin tree” agritourism potential

Downside
- Slow growing
- Needs fruit thinning
Fig
*(Ficus carica)*

- Ancient, Mediterranean fruit
- Resurging popularity
- Lots of uses (fresh, dried, processed)
- Ripen June thru August depending on variety
FIG CULTIVAR SELECTION

- Closed eye varieties preferred over open eye
- Generally avoid California varieties
- Cold tolerance
- Many Cultivars:
  - Celeste (early), LSU Gold, Kadota, Alma (late), Brown Turkey ("everbearing"), Champagne, Hardy Chicago
  - New Mediterranean types coming onto the market.
FIG CULTIVATION TIPS

- Do not need cross-pollination to set fruit
- Sensitive to nematodes and may be damaged by cold temperatures
- Plant in a protected location
- Space at least 10 ft apart
- Prune to bush form
- Easily root from cuttings
FIGS

Upside
- Diversity = market opportunities
- Low fertility requirements
- Minimal pruning

Downside
- May be cold damaged (<10F) or late freezes
- Fruit can be messy
- Fruit drop issues
Pomegranate

Pomegranates (*Punica granatum*) have been popular fruit throughout human history and are experiencing a surge in popularity at present due to the health benefits associated with their juice. Widely grown for their edible fruits, they are equally valuable as ornamental plants. While their precise origin is unknown, pomegranates are considered native from the near-Middle East to the Himalayas. The first plants were probably introduced into the southeastern United States by early Spanish settlers to their colony at St. Augustine, FL. Pomegranates have a long history of use in South Carolina. Plants are often found around old home sites and plantations, especially in the Midlands and Coastal Plain. They grow and flower well in most of SC, but tend to fruit poorly in our humid climate as compared to the warm, arid regions where they are particularly well adapted.

Description

This deciduous (rarely evergreen) shrub or small tree typically grows from 12 to 20 feet tall and nearly the same in spread. Pomegranates sucker profusely from the base, and if not removed routinely, the plants quickly become dense with many stems. Stems tend to be slender and thorny with reddish-brown bark that becomes gray with age. Leaves may be alternate, opposite, or whorled on the stem and are 1 to 3 inches long by ½ to ¾ inches wide. The leaves are glossy, dark green, and somewhat leathery; they turn yellow in the fall and may linger on the plant until early-winter.
POMEGRANATE
(*PUNICA GRANATUM*)

- Ancient Middle eastern fruit
- Famous nutritional qualities
- Novelty crop locally
- Common pass along plant in SC
- Ripen September/October
POMEGRANATE CULTIVAR SELECTION

- Over 100 Cultivars available
- Hard seeded vs. Soft seeded
- Cold hardiness
- Recommended for SC:
  - Traditional varieties: Granada, Early Wonderful, Wonderful
  - Angel Red & Utah Sweet (both soft seeded)
  - Russian Series (cold hardy)
    - R8-Salavatski, R26-Afganski, & 17 others
POMEGRANATE CULTIVATION TIPS

- Do not need cross-pollination to set fruit
- Trees grow to 12-20 ft.
- 12’ in-row spacing
- May be damaged by temperatures below 10⁰ F
- Plant in a protected location will excellent drainage.
- Easily rooted from cuttings
POMEGRANATE IN THE LANDSCAPE

Upside
 Extremely drought tolerant
 Lots of local interest

Downside
 Fruit split
 Cold damage
OTHER FRUITS TO CONSIDER

- Elderberry
- Jujube
- Hardy Kiwi
- Mulberry
- Quince

Source: www.unh.edu
Uncommon Fruits for Every Garden

Expand Your Palette with Pawpaws, Shipovas, Jujubes, Maypops, and More!

Lee Reich
Illustrations by Vicki Herzfeld Arlein
Horticultural Crops

This series spans six principal topic areas:

- Fruits
- Vegetables
- Herbs and Flowers
- Greenhouse Production
- Agroforestry
- Other Horticultural Topics

These resources offer detailed information on production of specific horticultural crops, focusing on sustainable and organic production methods for traditional produce, and also introducing a range of alternative crops and enterprises. In these publications you can find information on strategies for more sustainable greenhouse and field production of everything from lettuce to trees.

Fruits

Publications

NOTE: Some of the following documents are available as Adobe Acrobat PDFs. Download Acrobat Reader.

Apples: Organic Production Guide - IP020
- Summary - Buy PDF - Buy Print Copy

Blueberries: Organic Production - IP021
- Summary - Buy PDF - Buy Print Copy

Grapes: Organic Production - IP031
- Summary - Buy PDF - Buy Print Copy

Organic and Low-Spray Peach Production - IP047
- Summary - Download PDF - Buy Print Copy - View Now

Organic Culture of Bramble Fruits - IP022
- Summary - Buy PDF - Buy Print Copy
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