# The Fruit Growers of Southwest Florida

**JULY 2020**

The speaker at the Tuesday, July 21 Collier Fruit Growers Meeting will be James Farwell. James grew up in Woodbury, MN before moving to Fort Myers. He started his journey into agriculture growing various vines and vegetables around 14 years old and he is now focused nearly exclusively on cultivating edible fruit trees. After a career as a mergers and acquisitions investment banker, he purchased the 'Montessori School of Fort Myers,' where he has served children and families as the Head of School since 2013. In the summer of 2018, he became less active at the school in order to purchase a 2.7-acre property with a house on it in the Colonial Farms neighborhood of south Fort Myers, FL (middle of USDA, zone 10a). Since then, he has begun planting out the several hundred potted fruit trees that he had accumulated over the years. Aside from the 20+ species of fruit grown at the school for the children, the Farwell Fruit Farm hosts 170+ species and cultivars of fruit trees. While the farm includes a collection of Annonas, Citrus, and Eugenias, James enjoys spending most of his time with the Garcinias and most of all the Plinias and Myrciarias (Jaboticaba and its close relatives). Jim can be contacted at: jmfarwell@gmail.com or by tel: 352-256-2676

Due to Florida's COVID-19 'Stay-in-Place' Guidelines the April meeting of the Collier Fruit Growers was canceled. James has kindly agreed to address the Fruit Growers at the July 21 membership meeting.

**Collier Fruit Growers Meeting: TUESDAY, July 21, 2020.**
**Limited tasting table starts at 7:00 pm. The meeting starts at 7:30 pm.**
**Life Center, Tree of Life Church, 2132 Shadowlawn Dr., Naples, FL 34112**
**Please observe the social distancing guidelines at all times.**
**All meetings will also be streamed live on Facebook**

COVID 19 is having a tremendous negative impact on our lives and the world economies. As such the Meetings and Activities of the Bonita Springs Tropical Fruiy Club along with those of the many associated organizations have been curtailed since March 15. Slowly things are coming back with social distancing and other safety precautions. As many of our members are older, please wear a mask when near others away from home and as always stay safe.

Possible speakers for the scheduled July 14 and August 11 Membership Meetings will be announced prior to the respective meetings.

Reminder: There will be no FGSWF Newsletter in August.

**Bonita Springs Tropical Fruit Club Meetings will be July 14 and August 11, 2020.**
**Workshops: Tuesday, July 28 and August 25, 2020.**
**Members will be notified of the meeting time and location**
**prior to each meeting and workshop.**

## RECIPE OF THE MONTH:

Chef Jack Raben of the Fogg Café at Naples Botanical Garden and Lurcat Catering uses the picked mangos on his Cuban sandwiches.

recipe:

### Pickled Mango

1 cup sugar
2 cups water
1 cup rice vinegar
2 chilis, serrano, Fresno or jalapeno peppers, finely diced
6 mangos, peeled and sliced ⅛ inch thick
1 sprig fresh mint
Combine sugar, water, vinegar and peppers and bring to a simmer until the sugar has dissolved. Turn off heat, add mint and steep like tea until cooled to room temperature. Add mango and let sit for 24 hours.

### Mango Mustard Sauce

Chef Raben recommends this sauce with chicken, seafood and pork dishes. He uses it on the café catering menu for special events when fried smoked gouda balls are served.
1 mango, diced ½ inch
3 Tbs local honey
1 Tbs Dijon mustard

The two recipes were found in Naples Florida Weekly for June 18-24, 2015.

# 'Hybridizing Annona Varieties'
# Summary of Mr. Har Mahdeem's Presentation to the Collier Fruit Growers, May 19, 2020 As noted, and documented by Rodger Taylor

Pollination:

- Blossoms at first open in the 'Female' stage; later, for a few hours (*sometimes for days during cold spells*), before the Annona flowers are usually neutral (*non-receptive*) for several hours, finally they enter the 'Male' stage. If pollination occurred during female stage, the petals drop days after the male stage, and a tiny fruit set holds. (*Note: If pollination does not occur, the whole dried-up flower and stem will fall off, usually in less than a week*.)
- Collect pollen from male flowers at dusk, using a fine nature bristle artist paint brush. Place the pollen in a 35mm film container with sealable lid. Use the pollen immediately, fresh as possible.
- Using a brush, cross-pollinate the Annonas female flowers with a different variety of atemoya, biriba (*Rollina*), cherimoya, clustered apple, ilama, guanabana, or sugar apple.

Propagation:

- When fruit ripens collect and evaluate desirability (*taste, smell, color, size, appearance, etc*.) and harvests the seeds of several selected fruits.
- Observe the stems when the seeds first start to germinate / sprout. The pink, red and purple-stemmed ones (*at germination*) will typically produce new attractively colored hybrids.
- Use the green-stemmed ones (*green right from germination*) for rootstock.
- Clearly identify each seedling (*first female x then male parents, followed by A, B, C, etc*.), as Annona trees do not grow true from seed.

Grafting:

- After 12 to 18 months carefully cut scions from each of the seedlings. Graft the scions [in March or August] onto one of the original parent trees. Tag and clearly identify each scion, cross-referencing it to both the female x male parents and individual seedling (*A, B, etc*.), from which it was derived. (*Note: Do not kill or severely damage the seedlings*.)
- In two to three years the scions should be bearing fruit. Harvest the fruits, keeping them separated and identified by the individual scion graft. Chose the most desirable variety of fruit.
- Returning to the one to two-year-old seedling from which the original scion was taken, collect and graft addition scions onto the less desirable seedling rootstocks.

Commercialization:

- In two to three years there will be multiple specimens of the same cross-pollenated Annona trees bearing the new selected variety of fruit.
- Total elapsed time of six to eight years is needed to market a new hybridized variety of Annona.

Additional Information:

Refer to the article entitled "Annonas by Dr. Stephen Brady," which appeared on Pages 6 to 8 in the July 2019 issue of FGSWF, copy of which can be accessed on-line at: CollierFruit.org

Krome Section

*Proc. Fla. State Hort. Soc.* 127:**–**. 2014.

# Conservation and Commercial Development of *Mangifera* Species (Wild Mangos) in Florida

Noris Ledesma* and Richard Campbell

*Fairchild Tropical Botanic Garden, Coral Gables, FL*

**In Southeast Asia there is a wide diversity of *Mangifera* species that bear edible fruit, with 69 taxonomically recognized (Kostermans and Bompard, 1993). Among these species, *Mangifera indica* is the most important commercial fruit crop, although *M. lalijiwa, M. odorata, M. caesia* and *M. foetida*, among others, are routinely cultivated or collected for sale from wild trees. Several *Mangifera* species have been collected and are under evaluation at Fairchild Tropical Botanic Garden in South Florida over the past 15 years. More than 33 accessions of *Mangifera* species from Borneo, peninsular Malaysia, Thailand, Hawaii, and Puerto Rico have been accessioned into the genetic collections of Fairchild Tropical Botanic Garden since 1994. *Mangifera applanata* (Assam kepeng), *Mangifera caesia* (wani), *M. pentandra* (Assam poah), *M. griffithii* (rancha rancha), *M. laurina* (Mangga ayer), *M. quadrifida* (Assam kumbang), *M. rubrapetala* (raba), *M. casturi* (kastooree), *M. lalijiwa* (honey mango), *M. odorata* (kuini), *M. pajang* (pajang), *M. torquenda* (lamatan), *M. foetida* (bachang), and other possible *Mangifera* species are under evaluation. These wild, edible mangos are in critical danger of extinction and represent an important resource for the future of mangos. Data presented includes their adaptability to modern cultivation and potential as commercial crops.**

Street markets of Borneo, Malaysia, and Indonesia seasonally display wild mangos for sale, just as they have for hundreds of years. Most of the *Mangifera* species have edible fruits. We have documented experiences based in use of this fruit from local communities, markets and the surrounding countryside in Borneo, Peninsular Malaysia, and Indonesia from 2004.

## Materials and Methods

Over 33 accessions of *Mangifera* spp. were identified and collected from private residences, commercial orchards and public and private experimental farms in different regions of Malaysia, Indonesia, and Brunei Darussalam. Other accessions were introduced from Hawaii, Puerto Rico, and Brazil with the knowledge of their provenance. All accessions were collected and introduced into the United States as scions with the leaves removed. Scions were washed in soap and water, air-dried, wrapped in parafilm, and placed in plastic bags for transport. Transport time ranged from 2 to 12 d, depending on the species and location of collecting expedition. Eight to 12 scions were collected per species.

All species were grafted by the authors using a side veneer or cleft method commonly used for fruit crops in Florida. *Mangifera indica* 'Turpentine', *Mangifera rubrapetala*, *Mangifera casturi* and *Mangifera odorata* rootstock were used because the importation of *Mangifera* seeds from Southeast Asia is restricted by quarantine laws to protect against the introduction of the mango seed borer [*Sternochetus mangifereae* (F)]. These species are locally available in South Florida for use as rootstock.

We have outlined their potential as edible fruit crops, rootstocks, and as sources of genetic diversity for the future breeding of disease resistance and desirable horticultural traits in the modern mango. The importance of conserving these species and their genetic potential has been clearly recognized by the scientific community. However, nearly two decades after their taxonomic description, little has been done to advance these goals. This is due mainly to a lack of practical horticultural information about their care and domestication, and the challenges inherent in the collection, curation, and development of genetic material.

## Results and Discussion

Recording experiences with local communities and visiting markets provided basic information about the use of these species, and their economic potential. In most of the places we collected wild mangos from traditional or indigenous systems of knowledge and practice that have developed and accumulated over generations. These systems form the basis of local-level decision-making in agriculture, food production, human and animal health, and natural resource management.

The reported results are preliminary. We recorded experiences based on the use of fruit from local communities, markets, and the surrounding countryside in Borneo, Peninsular Malaysia, and Indonesia. Inhabitants consume many of these species fresh or mixed with pepper and spices in sambal. Others use their leaves as a vegetable. *Mangifera pajang, M. caesia, and M. casturi* have exceptionally beautiful growth habits with colorful flowers making them suitable as ornamentals for the tropics.

Collection and domestication has been a long and complex process and has only just begun (Campbell and Ledesma, 2010). It is necessary to approach new research about the use of these wild mangos and importance in rural economies, especially statistics concerning their value and reliable methods for measuring their contribution to farm households and the rural economy.

Wild edible mangos are in critical danger of extinction and represent an important resource for the future of mangos. Data presented includes their adaptability to modern cultivation and potential as commercial crops.

The introduction of improved selections or clones of *Mangifera* species and the identification of suitable economic potential and commercial development of *Mangifera* species has been conducted by Fairchild Tropical Botanic Garden for the past two decades. Many of the horticultural challenges have been confronted, including the identification of possible rootstocks and protocols for

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Table 1. Ex situ *Mangifera* species at Fairchild Tropical Botanic Garden, conservation status and economic potential

| Species | Provenance | Conservation status | Economic potential and description |
|---|---|---|---|
| ***Mangifera altisima*** | Sabah, Malaysia, Borneo | IUCN Red List. Extinct in the wild. | Fresh fruit, breeding, ornamental |
| ***Mangifera applanata*** Common names: asam pelipisan, peleepeesan | Sarawak, Malaysia, Borneo | | Rootstock for *Mangifera* sp., breeding. Grows in high elevation 1800 m.a.s.l. It has a flattened fruit, very tart, used for pickles. Seeds are very hard, and with longitudinal strips. |
| ***Mangifera caesia*** Common names: Belunu (sweet fruit), Binjai (tart fruit), Bua Buda | Sarawak, Malaysia, Borneo | IUCN Red List. Extinct in the wild. | Fresh fruit, breeding, ornamental, flooded soil. Generally restricted to the wet tropical lowlands bellow 450 m elevation, frequently in inundated areas, along riverbanks. It is common to found it cultivated in villages in Sarawak, especially in the Limbag Division. Fruit can reach 500 g and some can be long or oblong in shape. It is mono embryonic. The flesh is white and juicy. Some can be sweet, other can be more acid. Both have a unique, strong aroma and taste. In Malaysia, this is one of the most common and valuable mango species. Fruit is eaten when it ripe or dipped in chili with sugar and dark sauce. Used to make 'sambal', 'jeruk' and eaten with fish. Flesh is also pickled and preserved with salt in jars. They used for juices. Some fibreless clones command a high price in local markets. The wood is light red marbled with yellow, used for light construction. |
| ***Mangifera casturi*** Common names: kastooree, Air mawar (Rose water) | Kalimantan, Indonesia, Borneo | IUCN Red List Extinct in the wild. | Fresh fruit, breeding, ornamental, Inter stock, rootstock for *Mangifera* sp. *M. casturi* is a vigorous tree that forms a tight, upright canopy with shiny, dark green leaves, contrasted with bright red new growth. Tree can grow up to 30 m tall, with Inflorescensce up to 30cm long, multiflowered than smell like jasmin. Flowers are visited by honeybees and flies. Fruit are small compared to other species of mangos. It weighs around 50 to 84 grams each. Immature fruit are green, and when ripe the color changes to brown or purple-black and has a shiny surface. It is polyembryonic. The flesh is orange with fiber with a unique sweet flavor than taste like lychee with a distinct aroma. It makes a handsome tree. |
| ***Mangifera foetida*** Common names: Bua Laamb (Tart); Bachang | Sarawak, Malaysia, Borneo | | Breeding. Generally restricted to the wet tropical lowlands bellow 1000 m elevation. There are some round or elongated fruit. Large ones are sold to the market for better price. The fruit is savory with a strong turpentine flavor and aroma. It is monoembryonic. Normally is eaten fresh. It is used for curries or pickles. Immature fruit is used as a vegetable. Peeled and soaked in salty water, sliced to make salad (tujak). They use it to get the acid for preparation of sambal (green pepper with lemon, and sometimes add curries). Leaves are mash to use as antiseptic, and bark is used to make lotion for treating ulcers |
| ***Mangifera griffithii*** Common names: Assam Kundang, Asam-raba (larger fruit), Raba pisang, Bua Keramut | Sarawak, Malaysia, Borneo | | Fresh fruit, breeding. It is a very tall tree, sometimes cultivated near villages. Fruits are purple when mature. The flesh is deep orange, very juicy and with fiber. It has thick skin with fragrant resinous flavor. Flesh is very sweet and pleasant. Ripe fruits are eaten by hand, normally sucked. Immature fruit also used to prepare pickles. |
| ***Mangifera lalijiwa*** Common names: Honey mango, mango Madu | Bali, Indonesia | | Fresh fruit, breeding. The name "madu" means "honey" and they appear in great quantities in local markets of central Java. Tree is small with leathery leafs. The fruit is 250 gr. with green skin. It is monoembryonic. Flesh is white pale yellow with particular brown honey pockets in the flesh. Fruit are very sweet and aromatic with a distinguish honey flavor. It is medium size tree, and productive. Flowers are fragrant, with pyramidal panicles with a fragrant aroma to jazmine. Honey bees often visit flowers. |

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Table 1. Continued.

| Species | Provenance | Conservation status | Economic potential and description |
|---|---|---|---|
| *Mangifera laurina* Common name: Mangga ayer | Sabah, Malaysia, Borneo | | Fresh fruit, breeding. Fruit are about 200 g, yellow green skin and juicy flesh. There are some differences in the shape of fruit and flavor in different accessions of *M. lauraina* in our collection. All are polyembrionic with big seeds and fiber. They are well adapted to wet climates and the flowers and fruit seems to be resistant to anthracnose. |
| *Mangifera odorata* Common name: Kuini | Sarawak, Malaysia, Borneo | | Fresh fruit. A popular garden fruit, propagated by seeds. The fruit is green skin with yellow to orange flesh with a strong fragrant smell. Sometimes called Durian mango. The seed is flat and hairy. The skin is peeled off before consumption. The sweet fruit is is eaten outright or juiced. Immature Kuini is also used in pickles, or mixed with raw fish and chilies. Fruit its sale by fruit and by bushes. Prices vary by quality and size. Fruit comes in different shapes, always green skin, but different textures, sugar content, and quality. |
| *Mangifera pajang* Common name: Asam Embawang | Sarawak, Malaysia, Borneo | | Fresh fruit, breeding, ornamental, vegetable. Fruit fragrant, up to 3 kg. It is monoembryonic. Fruit brown thick skin, with yellow flesh. There are differences in the shape fruit, some are round others are oblong, and some has less fiber. Flesh juicy and tart, some are sweet with slight tang after taste. Fruit are eaten out of hand when ripe, or it can be used immature in pickles and chutneys. This fruit is eaten as an appetizer or sambal made of the fruit slices, belacan, red chilli, salt, and sugar. Tree majestic columnar tree than grows over 40 feet, dark leaves. The leaves are edible, used as a vegetable. Often sold at market. |
| *Mangifera pentandra* Common name: Assam poah | Sarawak, Malaysia, Borneo | | Breeding. Tree is tall with leathery leaves, small white yellowish flowers. Fruit is 50–80 g, pale orange, sweet, and juicy with big round stone. Leaves are used as an astringent. |
| *Mangifera quadrifida* Common name: Assam kumbang<br><br>Betong | Sarawak, Malaysia, Borneo | | Fresh fruit, breeding, rootstock. Fruit is deep purple with bright orange flesh. Skin is leathery. They vary in size and shape. The fruit are sweet to sour in taste, either consumed fresh or processed into jams or jellies. Young fruits can be made into pickles, chutneys, or dried as preserves; and also can be cooked as dishes. *M. quadrifida* as a common species in the forest, but this species is also being cultivated or semi-cultivated in home gardens applied and orchards, where trees are managed for harvesting. Herbicide and fertilizer are commonly |
| *Mangifera rubrapetala* | Sarawak, Malaysia, Borneo | IUCN Red List. Extinct in the wild. | Inter stock, rootstock for *Mangifera* sp. The tree is medium size with an open canopy, and very productive. Fruit grows in clusters with small yellow fruit. The fruit are rich in flavor with fiber and big seed. They usually are polyembryonic. |
| *Mangifera torquenda* Common name: Lamatan | Sarawak, Malaysia, Borneo | | Interstock, rootstock for *Mangifera* sp. The fruit are about the size of oranges, and normally completely round. It has strong odor rivaling those of *M. pajang*. Their flesh ranges in taste from sour to quite sweet. It detaches easily from the seed and fresh fruits are quickly prepared by slicing them all the way around and twisting the sections in opposing directions like you would do with a peach. The fruit is used in the preparation of many local dishes including "Ulam" and is also highly desired for pickles. |

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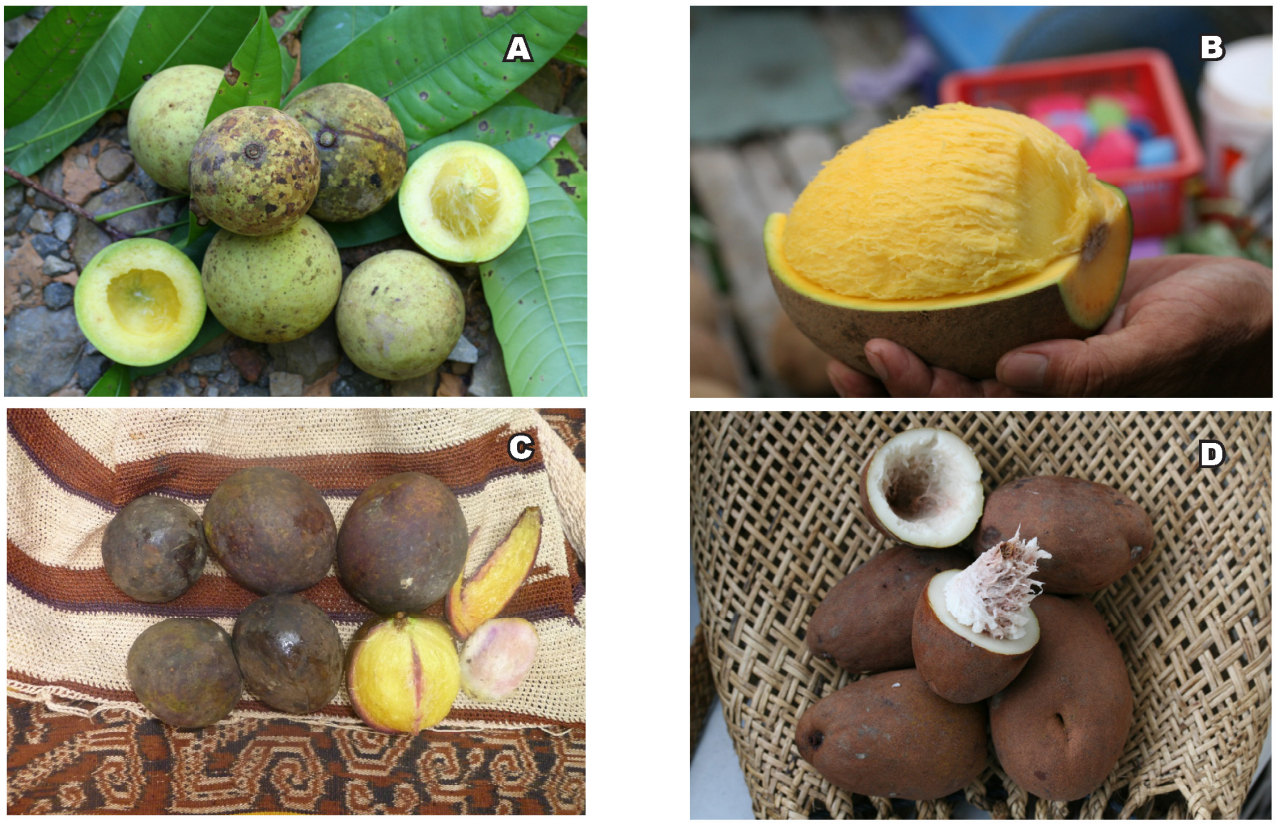



Fig. 1. Many wild mangos have excellent tolerance (perhaps even resistance) to anthracnose. The trees will bear fruit in wet climates where the common mango rarely reaches maturity, offering a possibility for rootstocks or breeding material. Examples include: (**A**) *Mangifera torquenda*; (**B**) *Mangifera pajang*; (**C**) *Mangifera quadrifida*; and (**D**) *Mangifera caesia*.

their propagation to allow for the development of these potential resources for the modern mango industry (Fig. 1).

Table 1 summarizes the introduction of improved selections or clones of each species since 2004. Fourteen *Mangifera* species from Malaysia, Borneo; Indonesia; Borneo, Indonesia, and Seychelles Islands have been accessioned into the genetic collections of Fairchild Tropical Garden in Miami, FL. The species collected were *Mangifera altisima, M. caesia, M. casturi, M. foetida, M. griffithii, M. lalijiwa, M. laurina, M. odorata, M. pajang, M. pentandra, M. quadrifida, M. rubrapetala, M. torquenda M. applanata* and *M. zeylanica*. There are additional *Mangifera* accessions collected on the basis of their potential for breeding purposes and fruit quality that remain unidentified.

Identification and classification of species has to be reviewed. Herbarium specimens and taxonomic review are proceeding. The DNA analysis using several laboratory teams and research groups is also underway to aid in the proper identification of these accessions. There is a possibility of wild hybridization between species and this may be detected with genetic analysis. However, rootstocks and information about potential graft compatibility of each species is still a challenge. Graft compatibility and horticultural traits must be further evaluated under a wide range of conditions. Other species must be evaluated and suitable rootstocks identified. In this way we can begin to collect improved clones that will better serve our horticultural needs.

## Literature Cited

Campbell, Richard J. and Noris Ledesma 2010. Update on new *Mangifera* species in Florida. In: Proc. of the Ninth Intl. Mango Symposium, Number 992, China. p. 95–99. Intl. Soc. Hort. Sci.

# Jacaratia
## By Crafton Clift

Once in the Amazon basin, I was puzzled that a chorisia or Ceiba tree should be in such a wet habitat. Massive trunk, no thorns, five leaflets – then a yellow fruit on the ground – soft flesh, hollow, small black seeds – looks like a papaya. Then, I was even more mystified that a Jacaratia(1) would be found anywhere but the driest, rockiest terrain.

At an auto sale, my friend, Rita O'Hearn bought a pickup and was given a free trip for two to Jalisco, Mexico. On the way from the airport to the hotel I asked the cab driver where I could find bonette (the local name for Jacaratia). "Anywhere, its all over." I asked again at the hotel and got the same answer. In pursuit of rare fruit, I don't know how to go every direction at once, so I asked for more specific instructions. "Go to that Parada de Bus sign. When a bus stops, get on it. When you are outside the city limits, get off and ask again." We did. We got off at a country store that had five men on the porch. After I told them I wanted bonette, they talked among themselves and decided José would get them for me. "Vamanos!" I was ready to go. José said to meet him at the same store tomorrow at five. So, we went back to the hotel and took a jungle tour by jeep. The tour guide pointed out several bonette trees in the sparse landscape.

The next day I waited at the country store while Rita went to mass. José brought a tow sack full of bonettes and when I squeezed one and it burst on my thumb, I tasted it and was delighted it doesn't have to be cooked with sugar. Some fruits were green and had copious latex – a proteolytic enzyme useful in organ transplants – they said.

When we were boarding in Guadalajara, there were two men in line in front of us with big camera equipment. When we were seated on the plane, they were in the seats in front of us, so I took a foot long bonette with five ribs like a giant carambola and said, "Put this on your TV show!" Only then did I realize there was Larry Klase who used to give the ten o'clock news in Miami, and the other guy was a college professor who had presented "Flowering Trees of Mexico" at the Menninger Flowering Tree Conference.

We gave out several thousand seeds to Homestead, Miami, and Broward rare fruit council members but could only account for 12 seedlings. They need sunlight to germinate.

Only one of those bonettes survived at Rita O'Hearn's Naples (Golden Gate Estates) property where its female flowers do not get pollenated.

Steve Brady has two jacaratias – a large male that makes lots of flowers and a small female that is shaded out by the male.

Fruit and Spice Park has two large trees, but I don't think have had fruit.

For half a century The Kampong had a meter thick jacaratia without a mate.

Footnote: (1) Wild Papaya, of which there are seven known species; the two most common are *J. Mexicana* and *J. sponosa*.

# Mamey Sapote

*By Dr. Noris Ledesma*

Under the Florida sun, mamey trees grows in some backyards in South Florida. From massive branches that shoot straight out to grow football-shaped fruits with leathery skin the texture and color of sandpaper.

Mamey sapote (*Pouteria sapota*) is native to the seasonally dry forests of Mexico and Central America. It was widely distributed in Central America before Columbus and introduced to the Caribbean, South America, and Asia. Mamey sapote has been grown in South Florida since the mid-1800's and of all tropical fruits; mamey is the one that represents the nostalgia for Cubans. Exiled Cubans longed for a steady supply of mamey and are willing to buy it at any price.

Those who know it well believe that there is no better fruit. Its creamy texture and rich flavor are unmatched. The mamey sapote is a large-spreading canopy tree. The fruit are formed directly on the thick twigs and branches. Nothing about the stark exterior of the fruit prepares you for what is revealed when you cut one open; a long and shiny black seed, revealing the red salmon color of the flesh. The pulp is aromatic and sweet, soft when ripe, almost fiber free.

The mamey sapote is usually eaten fresh. When purchasing mamey sapote, make sure its skin is free of blemishes and that it is firm and mature. Maturity is best determined by nicking the thick skin with your fingernail. A mature mamey sapote should have a red or pink flesh color. If the flesh color is green, the mamey sapote is not mature. To ripen the fruit at home you will need to leave them at room temperature until the fruit softens.

Although mamey sapote fruit can be eaten fresh, popular uses for it include adding it to fruit salads, desserts, milk shakes and other fruit drinks. Because of its interesting taste and texture, the mamey sapote fruit is rapidly gaining in popularity for cooking purposes. Additionally, mamey sapote is high in vitamins A and C, as well as in potassium. It is also an excellent source of dietary fiber. The famous delicious milkshakes from the Caribbean are prepared from mamey sapote.

In Florida the greatest part of the fruit crop matures from May through September, but some mature fruits can be found at any time of the year. Often flowers, immature fruits, and mature fruits will be present on a tree at the same time. An individual fruit takes more than a year to mature on the tree.

They are still some mamey sapote groves in South Florida, and the majority is the 'Pantin' cultivar. Other varieties are Pace, Viejo and the gigantic "Magaña'. All of these varieties are available in local nurseries including some of the new Fairchild selections: 'Lorito', 'Cepeda Special", which were selected for its productivity and red colored flesh.
Mamey sapote is a vigorous tree. For the gardener with plenty of space, mamey sapote can make a picturesque specimen for your backyard. Training the tree is one of the principal requirements to grow it. The tree usually will develop a desirable shape. Big trees can be in danger of damage to the tree and its surroundings during windstorms. Each year after harvest, trees shoud be pruned, removing the upright branches and keeping the tree 6 to 8 feet tall.

Mamey sapote trees grows well in a warm and sunny and preferably frost-free location. Trees prefer well-drained, sandy soil with regular applications of water to young trees. Addition of plant mulch to the soil surface will improve water-holding capacity, nutrient retention and availability to soil structure. Fertilization is best done with three applications per year - March, July and September - with an 8-3-9 application or other fruit tree formulation.

Welcome back to the mamey sapote and the Caribbean and the Aztecs roots even if you have not physically moved. Good growing!

# Pineapple Data: Posted on Facebook 'What's Ripening Florida?'

## By Garrett Weeks

Pineapple propagation is easy. With store bought pineapples, twist the top off. Peel the bottom leaves off till you have about an inch of stub or till the crown starts to taper back in. Twisting does less damage to the crown vs cutting, cutting also has a tendency to leave more meat [flesh] on the crown, which will rot and hurt establishment. Get rich, well-draining soil; use acidic soil if possible.... almost as acidic as blueberries, tolerance PH:4.5-7. Pop that baby in! Some people say let it stay out for a few days to scab, but I have had more live if I just plant them in immediately. If the unestablished top appears to die, continue caring for it, it has a chance to spring up pups for a couple months. Keep soil damp but not wet. Pineapples are also VERY drought resistant. Very sensitive to cold though, most store bought (smooth cayenne) are actually a zone 10-11 plant. When watering, do water it over the leaves. Pineapples are bromeliads and feed through the leaves as well as the roots (root ball is surprisingly small). Let dust and whatnot wash in, the plant will feed on it. Full sun to partial shade. Pineapples, like peaches, only ripen on the plant. Once picked they stop ripening. The reason they get more tender when sitting on the counter is the enzymes breaking the fruit down. When harvesting you should be able to gently twist the fruit off the ratoon when gold and fully ripe, it will also have a strong and sweet pineapple smell. I recommend caging or bagging the fruit to prevent critters from eating.

If you want to propagate, there are four ways with pineapples:

I – Aforementioned, twist off a top of a pineapple; about two years to fruit, I have had them be as long as 5 if conditions are poor.

II - Suckers; suckers are pup plants that grow out from the mother plant from between the sets of parent leaves (aerial suckers) or from below the ground (Basal suckers). These can be left to grow, with no adverse effect on developing fruit, till around 1'-2' tall before removal and replanting, sometimes basal will have roots.
Fruits in about 1.5-2 years.

III - Slips; slips are pups that grow off the stalk (ratoon) between the parent plant and the developing fruit. These will draw nutrients away from the fruit till removed. If you only wish to develop fruit and not propagate more, remove slips ASAP. If you plan to propagate, remove slips when large enough to plant; I usually remove around 1"-2" tall for balance between propagation and fruit development, the bigger they are, the easier to establish. The little ones are hearty but seem to take forever to build roots. These will usually fruit around 1.5 years.

IV - Seed. Yes, pineapples have seeds. When cutting up pineapples you have probably seen them and dismissed them as part of the husk, I know I have. They are small, black, hard, and tear shaped. The seeds reside beneath some of the eyes, just below the surface. The seeds will develop if the flower from that eye gets pollinated. These are extremely challenging to use for propagation, usually only done when making new cultivars or professional growers and gardeners looking for a challenge. Seeds may germinate in about 6 months given the right conditions. Seeds are slow growing. I bought some seedlings a year ago and the entire leaf structure is still only about 3"-4" wide total. I have read it takes 3-6 years to fruit.

For more technical data check out this scholarly article: Hort.Purdue.edu/newcrop/morton/pineapple.html

# Collier Fruit Growers News

## Lalijiwa

Rodger Taylor recently provided a lalijiwa (*Mangifera lalijiwa*) tree to the Collier Fruit Growers. Lalijiwa (also known as 'Madoe' or 'Madu) is a mango relative, native to Java/ Indonesia, that produces medium size oval green fruit that has a fiber-free flesh and a mild Sweet Flavor, like that of many Southeast Asian mangos. They are extremely difficult to graft onto mango rootstocks, but according to Crafton, lalijiwa will grow true from seed and reportedly lalijiwa trees will produce fruit in two to three years. They are resistant to anthracnose but susceptible to bacterial black spot.

## Screwworms

Crafton Clift recently observed three possible screwworms exist a dead rat, found on Rita O'hearn's property in Golden Gate Estates, just above the rat's tail (See photograph below). The photograph and worm have been given to Dr. Jawwad Qureshi at the UF/IFAS Southwest Florida Research & Education Center in Immokalee for confirmation. As noted in the June issue of the SWFFG Newsletter, screwworms were eradicated from Florida in 1959. Their possible reemergence could present problems for Florida's agricultural industry.

# Grafting Mangos

June into the first week July, and the second half of September, when the night-time temperature remains at 75-deg F or above, is the time of the year to graft mangos. It is best to avoid hot summer days. Commonly two types are used: Terminal Side Veneer and Cleft (topworking) grafts. Budwood is best collected on a dry evening, clearly identified as to variety and immediately places in a sealed plastic bag or wrapped tightly and sealed in a thin layer of Parafilm. Grafting is generally performed in the morning and loosely wrapped with plastic and zip-lock plastic bag to prevent the grafted budwood from getting wet. Please refer to "Understanding How Grafts Work", by Crafton Clift, on the following page.

# Fruits which Ripen in July:

Apple, atemoya (beginning), banana, Barbados cherry (end of season), black sapote (sporadic), carambola, carissa, coconut, fig, granadilla, grape, illama (end of season), jackfruit, kwai muk, longan, lychee, mamey sapote, mango, miracle fruit, mombin, mulberry, macadamia, monstera, muscadine, papaya, passionfruit, peanut butter fruit, persimmon, pineapple, soursop, pomegranate, santol, sapodilla, Spanish lime, strawberry tree, sugar apple, wax jambu, white sapote.

Annual fruits: Watermelon, cantaloupe, pickling cucumbers, corn, eggplant, winter squash (Cushaw/Seminole pumpkin), beans, peppers (hot), cherry tomatoes.

# Grafting

Understanding How Grafting works

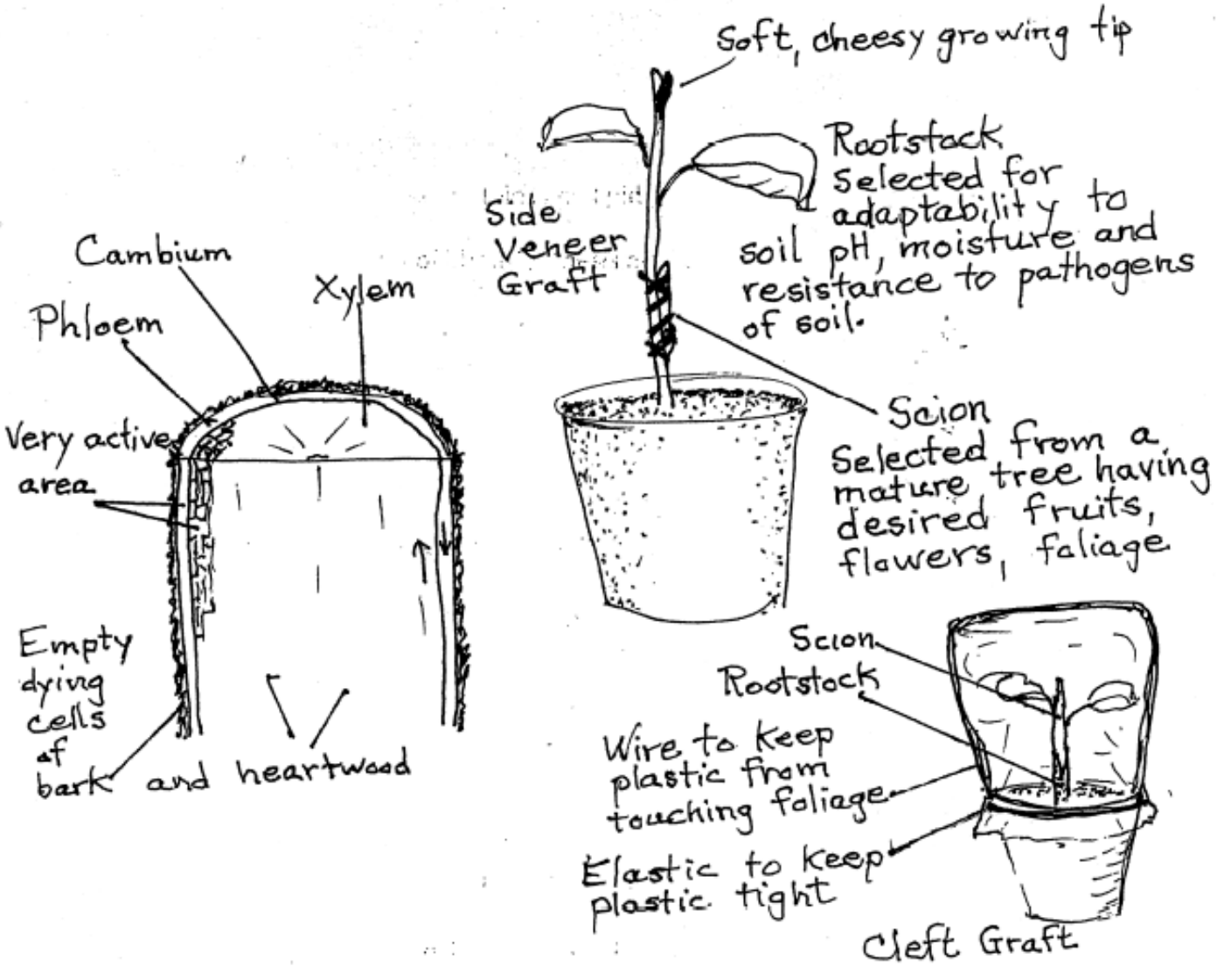
Crafton Clift

Xylem is the hard woody tissue that, like a bundle of soda straws, conducts water and elements from the soil to the leaves where carbohydrates, proteins and lipids are formed in the presence of sunlight.

The phloem conducts these products of photosynthesis down to nourish the entire plant and to be stored in fruits and roots.

The cambium is a thin layer of actively growing, changing, cells between the hard wood and the bark. Cambium cells are cells in transition-- becoming xylem to the inside and phloem to the outside. Xylem conducts one way up and phloem conducts one way down. If you graft upside down, those tissues still conduct liquids in the same one way direction they did before the scion was cut.

If you go to a 6" diameter mango tree and measure 3' from the ground and drive two nails 2" apart, twenty years later the nails are still 3' from the ground, but spread further apart by the expanding girth. Only the soft cheesy tips of twigs can enlongate and only at the interface of cambium can xylem and phloem tissues grow. Bark cracks and dies as it expands from pressure from the inside.



Bonita Springs Tropical Fruit Club

# Who We Are & What We Do

**The Bonita Springs Tropical Fruit Club, Inc., is an educational not-for-profit organization whose purpose is to inform, educate and advise members and the public in the selection of plants and trees, to encourage their cultivation, and to provide a social forum where members can freely exchange plant material and information. The club cooperates with many organizations, and provides a basis for producing new cultivars. We function in any legal manner to further the above stated aims.**

## General Meeting:

General meeting, that include an educational program, are held the *second Tuesday* of each month. General meetings begin at **6:15 pm for social time**, and the **speakers begin promptly at 7 pm**., at the Revive Wellness Center, **3521 *Bonita Bay Blvd.,*** Bonita Springs.

## Workshops:

Workshops (monthly discussions) are held on the *fourth Tuesday* of each month at **7 PM** at the Revive Magazine, when practical. This open format encourages discussion and sharing of fruits and information. Bring in your fruits, plants, seeds, leaves, insects, photos, recipes, ect.. This is a great chance to get answers to specific questions, and there always seems to be a local expert on hand!

## Tree Sales:

Semi-annual tree sales in July and November, in the Bonita Springs area, raise revenue for educational programs for club members and other related purposes of the club.

## Trips:

The club occasionally organizes trips and tours of other organizations that share our interests. The IFAS Experimental Station and the Fairchild Nursery Farm are examples of our recent excursions.

## Membership:

Dues are $15 per person for new members, and $25 per household. Name tags are $6 each. Send checks to: PO Box 367791, Bonita Springs, FL 34136, or bring to any regularly scheduled meeting.

# Bonita Springs Tropical Fruit Club

Feel free to join BSTFC on **our Facebook group**, where you can post pictures of your plants, ask advice, and find out about upcoming events!

https://www.facebook.com/groups/BSTFC/

Link to the **next meeting**: https://www.facebook.com/groups/BSTFC/events/
**Meetup** Link (events/meetings sync with the calendar on your phone!):

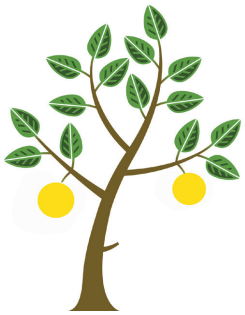
https://www.meetup.com/Bonita-Springs-Tropical-Fruit-Club/

Our **Website** (and newsletters with tons of info):
https://www.BonitaSpringsTropicalFruitClub.com/

**Officers and Board of Directors:**
Jorge Sanchez, President
Luis Garrido, Vice President
Dwain Kiddo, Treasurer
Talitha DeLuco, Secretary
Crafton Clift , Director
Lisa Mesmer, Director
George Kaladiny, Director

**Like Us on Facebook! https://www.facebook.com/groups/BSTFC/**

The Collier Fruit Growers Inc. (CFG) is an active organization dedicated to inform, educate and advise its members as well as the public, as to the propagation of the many varieties of fruits that can be grown in Collier County. The CFG is also actively engaged in the distribution of the many commonly grown fruits, as well as the rare tropical and subtropical fruits grown throughout the world. CFG encourages its members to extend their cultivation by providing a basis for researching and producing new cultivars and hybrids, whenever possible. CFG functions without regard to race, color or national origin.



**VISIT US AT:**
**www.collierfruit.org**

**REMEMBER TO RENEW YOUR MEMBERSHIP!**

## 2020 CFG BOARD OF DIRECTORS

**OFFICERS:**
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Bonnie Hawkins, Vice President
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Crafton Clift, Director
Micah Bishop, Director
Jorge Sanchez, Director
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**Like Us on Facebook! https://www.facebook.com/CollierFruitGrowers/**

**The Collier Fruit Growers monthly meetings are now broadcast live on Facebook at 7:30 pm on the third Tuesday of each month. The meetings are posted on the 'Collier Fruit Growers Group's Facebook page. Access the page by requesting to be a Member.**