



The Fruit Growers of Southwest Florida

JUNE 2020



The speaker at the Tuesday, June 16th meeting of the Collier Fruit Growers will be Patrick Garvey. Patrick owns and operates Big Pine Key's two-acre fruit farm: Grimal Grove. It is billed as the first breadfruit grove in the continental United States.

Tucked away at 258 Cunningham Lane, Grimal Grove is a breadfruit research site, agritourist attraction, and educational park. Breadfruit is a starchy cantaloupe-sized fruit that can be used

like a potato, bread, or even as a custard when ripe.

Patrick was born on Canada's Prince Edward Island, and as a child often stared out at the sea, dreaming of adventure. He graduated from Franciscan University in Steubenville, Ohio, with a history degree and did post-graduate studies at St. Vladimir's Theological Institute in Yonkers, New York.

In 2006, two years after coming to the Florida Keys to visit his brother, Patrick began working as an analyst for Florida's Department of Children and Families.

In 2011, he founded the Growing Hope Initiative, a nonprofit community food movement with educational programs, retreats, dinners, and festivals. Today the organization manages Grimal Grove's community activities. Patrick purchased Grimal Grove in 2013, which was once owned by the hermit Adolf Grimal. Patrick slowly restored the grove, planting a variety of rare and unusual trees. While much of the grove was destroyed by Hurricane Irma in September 2017, that ultimately became the catalyst for a greater vision.

In addition to overseeing Grimal Grove, Patrick also manages Key West restaurant Blue Heaven's mainland tropical fruit grove in Florida City.



Collier Fruit Growers Meeting: TUESDAY, June 16, 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 our two Fruit Growers Groups 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.

The Membership Meetings of the Collier Fruit Growers will be virtual, steamed live on Facebook for the immediate future. The Grafting Class with Dr. Noris Ledesma scheduled for June 6 has been canceled pending the reopening of the Naples Botanical Garden. Participants will be contacted as to the possible rescheduling of the Class or their refund. Thankfully, Dr. Ledesma has already agreed to hold the Grafting Class in June of 2021.

Kelly Wilson, of the UF/IFAS Extension Family Nutrition Program will possible speaker at a June 9 Meeting of the Bonita Springs Tropical Fruit Club. Club Members will be notified by Email in early June as to the status of Kelly's presentation.



Bonita Springs Tropical Fruit Club Meeting: Tuesday, June 9, 2020.
Members will be notified of the meeting time and location prior to June 9.

RECIPE OF THE MONTH: This a delicious vegan alternative to BBQ Pulled Pork, taking an hour and thirty minutes start to finish to complete, including an estimated thirty minutes prep time. Serves four to six persons.

recipe:

BBQ Pulled Jackfruit - A Vegetarian Recipe

Ingredients:

5 lbs. Fresh <u>unripe</u> jackfruit	1 tsp. brown sugar
1 tsp. olive oil	¼ tsp. cayenne pepper
½ onion, chopped	1 tsp. chili power
3 cloves of garlic, minced	1 ½ tsp. 'Liquid Smoke™'
1 tsp. sugar	1 tsp. paprika
1 tsp. ground cumin	2 cups vegetable broth
½ cup vegan BBQ sauce (a recipe using Surinam cherries is featured below)	
Buns for pulled jackfruit sandwiches or corn tortillas for gluten-free tacos	

Instructions:

Cut and remove the skin and outer ¼ to ½ inch layer of the jackfruit. Pull and cut the jackfruit to remove the stringy parts that are located between the seed sacs. This is the part of the fruit that is used to make the BBQ. Save the rest of the jackfruit for something else.

Sauté the onion in olive oil over medium heat for approximately seven minutes or until translucent, then add the garlic and sauté a minute or so longer.

Add the jackfruit, sugar, spices, and 'Liquid Smoke™'. Stir until the jackfruit is evenly covered.

Add the vegetable broth, and simmer for 30 minutes or until the liquid is mostly absorbed.

Transfer the jackfruit out to a baking sheet and cook at 325° F in the oven for 20 minutes.

Remove from the oven and cover with BBQ sauce.

Return the jackfruit to the oven and cook for another 10 to 15 minutes or until the jackfruit is lightly brown.

Serve and enjoy.

Notes:

Make sure that your jackfruit is pale in color. If it's ripe it won't work for this recipe.

WARNING: Jackfruit is VERY sticky. Cover your knife with vegetable oil before starting and wash your hands often to remove the stickiness.

For gluten-free, the pulled jackfruit is delicious on corn tortillas, served with sliced avocado.

The source of this recipe is www.moreveganblog.com

Surinam Cherry Barbecue Sauce

Use fresh or frozen Surinam for this phenomenal tasting BBQ sauce. Yield is about 3½ cups.

Ingredients:

1 medium size onion, chopped	¾ cups brown sugar
2 Tbs. butter	¼ cup cider vinegar
2 garlic gloves, minced	1 Tbs. Worcestershire sauce
1 cup tomato ketchup	½ tsp. pepper
2 tsp. ground mustard	½ tsp. 'Liquid Smoke™,' optional
2 cups fresh or frozen Surinam cherries pitted and coarsely chopped.	

Instructions:

In a large saucepan, sauté the chopped onion in butter until tender. Add garlic and cook one minute longer. Stir in the remaining ingredients. Cook, uncovered, over medium-low heat for twenty minutes or until cherries are tender and sauce is thickened, stirring occasionally.

The source of the recipe is www.tasteofhome.com.

Murder Hornets: **Asia's Deadly Insect Found in U.S. for the First Time**

According to the Washington State Department of Agriculture (WSDA), the first-ever verified sighting of murder hornets [*Vespa mandarinia*] in North America was in Blaine, Washington in 2019, and as 'The New York Times' reported on Saturday, May 2, 2020, the insects, which are responsible for up to 50 deaths a year in Japan, have now 'officially' arrived.

Susan Cobey, a bee breeder with Washington State University's (WSU) Department of Entomology, said of these Asian giant lethal hornets, "They're like something out of a monster cartoon with this huge yellow-orange face." The hornets are striped orange-black and are over two inches in length. The queens can fly up to 20 miles per hour. According to the researchers at WSU, murder hornet stings can be lethal to humans even if they are not allergic to bees. The stings are incredibly painful because they inject a strong neurotoxin.



Murder hornets feed on other large insects, especially honeybees. They attack beehives and feed on larvae and pupae after killing adult bees. If murder hornets obliterate the honeybees, they will adversely affect farmers, growers and their crop production, which is very important to all of us. Therefore, it is important to get rid of all murder hornets.

Todd Murray, WSU Extension entomologist and invasive species specialist said, "It's a health hazard, and more importantly, a significant predator of honeybees. We need to teach people how to recognize and identify this hornet while populations are small so that we can eradicate it while we still have a chance."

Conrad Bérubé, a beekeeper and entomologist, was hired to kill what was believed to be a murder hornets' nest in Vancouver Island back in November 2019. While wearing bee suit, shorts, and sweatpants, along with Kevlar braces (sleeves) covering his ankles/calves and wrists, Conrad was stung through his layers of protection seven times. Conrad said, "It was like having red-hot thumbtacks being driven into my flesh," He described feeling like he had the flu the following day, suffering from body aches. While Conrad has been stung by bees thousands of times due to his chosen line of work, he described the stings from the Asian murder hornets as way more painful.

WSDA entomologist Chris Looney warns that if you see a murder hornet or nest, "Don't try to take them out yourself if you see them. If you get into them, run away, then call (1-800-443-6684). It is really important for us to know of every sighting if we're going to have any hope of eradication." One can also report sightings online at agr.wa.gov/hornets.

While the murder hornets are concentrated in Washington State, we must be vigilant, someday they may appear in our own neighborhoods.

Krome Memorial Section

Proc. Fla. State Hort. Soc. 129:***-***, 2016.



Training and Pruning a Mango Orchard to Improve Blooming and Yield in South Florida

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ADDITIONAL INDEX WORDS. *Mangifera indica*, estate farming, mango cultivars

There are increasing opportunities for mango production using innovative production systems and new cultivars that can distinguish themselves from those already commercially available that will allow for elevated prices and profit (Campbell, and Ledesma, 2006). One-year-old ‘Mallika’ trees were managed by shoot bending after planting to increase flower and fruit production. Shoot bending is known to reduce shoot growth and to enhance flowering of fruit trees. ‘Mallika’ trees undergoing shoot bending were compared with control trees that were left to grow in their natural way and branch position. Training and pruning included shoot tipping to encourage branching, pruning to stimulate flushing in young-bearing trees, and arch bending to increase flower and fruit production. The results are preliminary and include data for the year 2015, including three factors: number of panicles, set fruit (pea size) and fruit ready to harvest.

Proper training and pruning of mango trees is an important component of a profitable mango orchard operation. Successful pruning is based upon scientific principles of tree growth and physiology and an experienced understanding of tree response to various pruning cuts and practices. Each tree is an individual and should be treated accordingly across an orchard (Day et al., 2005).

Trees are pruned to help maintain a balance between vegetative and reproductive growth throughout the tree and to maintain desired tree shape and size with an open tree canopy that allows penetration of sunlight. The practices of training and pruning are not easily separated because the training of a young tree will determine how the tree will be pruned as it matures. Shoot bending is known to reduce shoot growth and to enhance flowering on fruit trees (Lauri, et al., 1998).

Varieties can differ in growth characteristics, as well as their response to pruning cuts, rootstocks, soil, and growing conditions. Orchard design, objectives, and goals should be clearly defined and pruning principles developed accordingly. Medium to high-density plantings require greater commitment to detailed training and pruning than low-density orchards and should not be attempted unless such a commitment to pruning is made at the establishment of and throughout the life of an orchard.

Understanding the action and management of plant hormones allows horticulturists to manipulate plants for specific purposes. Auxins produced in the terminal buds suppress the growth of side buds and stimulate root growth. They also affect cell elongation (tropism), apical dominance, and fruit drop or retention. Auxins produced in the rapidly growing terminal buds suppress growth of side buds, giving a young tree a more upright form. As growth rates slow with age, reduction in apical dominance gives the maturing tree a more rounded crown.

The auxin moves from the new leaves at the end of the branches by gravity down along the stems and prevents lateral growth. Reorientation of the branches from vertical to horizontal retards the movement of auxins to the end of the branches, allowing the lateral buds to grow. Branch bending has been used in the management of many temperate fruit. In other tropical fruit, like carambola, this treatment will induce a greater number of flowers and fruit on the horizontal branches.

The objectives of this experiment are to train and prune trees to develop and maintain small, mushroom-shaped trees that are capable of early production of large crops and high quality fruit. Training and pruning included shoot tipping to encourage branching, tip pruning to stimulate flushing in young-bearing trees, and arch bending to increase flower and fruit production in young trees.

Materials and Methods

LOCATION. The study was conducted in a private mango farm in the Redland farming district of South Florida. The orchard consists of 1.5 acres with a spacing of 4 m within rows and 6 m between rows.

LAND PREPARATION AND EDAPHIC CONDITIONS. The experimental site consists of a crushed oolitic limestone substrate that was rock plowed for several decades, but left fallow for the past 20 years. Vegetation was removed with heavy equipment and the ground leveled in 2014. There was no scarification, and all organic matter was incorporated into the soil profile. Planting holes were dug with a backhoe and inter- and intra-row spaces were left leveled and unamended.

PLANTING. Three-gallon container mango trees were planted in March 2015. Tree spacing was 6 m between the rows and 4 m within the row. Trees had irrigation during the first month of planting for establishment. No additional inputs of fertilizer or

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Training and Pruning Continued....

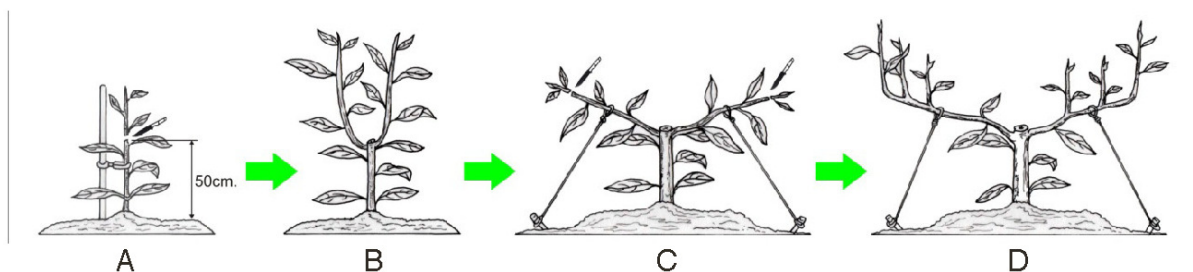


Fig 1. Tree training.

pesticides were applied. The mango orchard is free of herbicide and instead uses ground covers to suppress weeds. Additional mowing and hand weeding was performed as needed.

The cultivar included for the current study is ‘Mallika’, a hybrid between ‘Neelum’ and ‘Dusheri’. ‘Mallika’ is considered among the best of the new generation of Indian dessert mangos (Campbell and Ledesma, 2004). The tree is semi-dwarf, making it attractive to mango growers outside of India, who are always looking for new niche markets. The bright yellow fruit are flattened oblong shaped, with a rounded base and an irregular, non-waxy skin. The fruit weigh from 10 to 18 oz. When properly ripened, the pasty, but completely fiber-free flesh is a deep orange, with an intensely sweet, rich, and highly aromatic flavor (Ledesma, 2015).

TREE TRAINING AND PRUNING IN YOUNG TREES. After planting until May 2015, ‘Mallika’ trees were trained and shaped to increase flower and fruit production. Trees had no irrigation after April 2015 once they were considered established.

SHOOT TIPPING. Each central leader shoot of the grafted trees was tipped (Fig. 1A) to induce precocious branching (Fig. 1B). All lateral shoots were maintained and tipped after the second vegetative flush according to the method described by Campbell, et al. in 2002.

BRANCH BENDING. Branch bending was conducted by reorienting each upright shoot away from the vertical. (Fig. 1C,). Branch bending was achieved by the use of simple concrete weights of 5 to 7 pounds placed on the ground beneath the canopy of each tree. The concrete weights were designed with a hook protruding upward that would serve as the point of attachment for a string. The string was tied to the center of the branch (Fig. 1D) and each branch pulled down to the horizontal and attached to the concrete weights. The branches in the treatment trees were

bent to the horizontal and were compared with the control trees that had no branch bending. The controls received initial pruning and tipping, but no bending of branches.

The trees started blooming by March 2016. No fungicides or insecticides were applied. The numbers of panicles were evaluated. Trunk diameter was evaluated one and two years after planting. Fruit set and the number of fruit ready to harvest were also evaluated and compared with the control trees.

Results and Discussion

The results are preliminary and include data for 2015 and 2016 (Table 1). Evaluation began in March 2015.

This experiment carries on the young tree training work for mango begun by Campbell et al. in 2002. In the previous work, young mango trees were tipped each year at planting and throughout the life of the tree. In the present study the trees were also tipped, but instead of removal of the more vertical branches in year two and beyond, branch bending was added into the training system. All treatment trees that had their branches bent to the horizontal showed an increase in lateral growth and spread over the treatment time. All treated trees flowered during the first year of planting and had a significant increase in trunk diameter.

The trees that were not treated showed little lateral growth and finished the experiment taller and with a significant reduction in lateral growth and spread. The branching that was present in the control trees also showed inferior crotch angles and tended to have more shoot loss and breakage in the wind and with heavy rains. The majority of the trees did not flower during this season.

The trunk diameter of the trees increased with branch bending. At the end of the second year, the trunk diameter was twice of the size of the control. The increased trunk diameter will allow

Table 1. Evaluated Factors.

Tree # (inch)	Number of panicles		Fruit set		Picking time		Trunk diameter	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
1	32	0	202	0	15	0	3.2	1.6
2	35	0	208	0	17	0	3	1
3	45	0	215	0	15	0	3.2	1.2
4	46	0	218	0	16	0	3.6	1.5
5	44	0	220	0	24	0	3.8	1.5
6	48	0	230	0	26	0	4.5	2
7	40	0	180	0	12	0	2.9	1.5
8	42	0	200	0	19	0	3	1.7
9	45	0	208	0	20	0	3.2	2
10	50	2	230	1	25	0	4.4	2

Training and Pruning Continued....

for greater fruiting potential of these young trees and hopefully superior size control of the tree. Size control and precocious fruiting are keys to success in the high density orchard of the future. Blooming occurred on all of the treated trees. There was minor blooming on only one of the control trees that had a larger trunk diameter than other control trees. Trees were purchased in a commercial nursery and this one control tree may have been grafted on a different rootstock.

With the El Niño conditions in 2015–16 causing weather anomalies in South Florida, this season was considered abnormal for blooming and setting. Even with the El Niño conditions, the ‘Mallika’ trees in this study showed improved flower and fruit production after pruning management procedures including shoot tipping to encourage branching, pruning to stimulate flushing in young-bearing trees, and branch bending. Flowering and fruit production will be evaluated for several more years.

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Fruits which Ripen in June:



Avocado, banana, canistel, carambola, coconut, guava, jackfruit, jaboticaba, mulberry (ever bearing & spring harvest), lychee, mango, miracle fruit, strawberry tree, papaya, pineapple, sapodilla, and guanabana/soursop (pollinated last Nov./Dec.).

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The UF/IFAS Extension Service continues to host a series of webinars:

The June 3 event will include Overviews of both the **USDA Rural Development Programs and Services and SBA Programs and Services.**

USDA Rural Development will share information on programs providing assistance to Rural Businesses with our portfolio of more than 40 different loan and grant programs offered through USDA Rural Development. Specifically, we will be focusing in on our Business and Industry Guarantee Loan Program, our Rural Energy for America Program Loans and Grants, and our Value-Added Producer Grants during this session.

This class will also cover the programs and services that the Small Business Administration (SBA) offers to help start and grow a business in Rural Florida. Although the SBA is usually associated with loans, this overview will run through the SBA Loan Programs as well as our other programs and services including Counseling, Export Assistance, Government Contracting, Surety Bonds, and Disaster Assistance.

To register use the following link for the above webinar:

<https://www.eventbrite.com/e/us-department-of-agriculture-and-small-business-administration-programs-for-rural-small-business-tickets-104466797002>

Common Grafting Misconceptions

by Crafton Clift

Susan Kaiser reported: "I have a 'Sumo' tangerine that is pithy. Bought at last year's fruit sale." I suggested, "We could cut a root and pull a few inches of the cut end above ground to encourage leaves to grow so we can identify the rootstock. My guess is it is grafted onto *Citrus macrophylla*, which is a good rootstock for lemons and limes, but when tangerines and oranges are grafted onto *C. macrophylla* they have normal looking fruit which are filled with dry and 'ricey' juice sacs, and early or late in the season they will never have a drop of juice."

When I worked for Four Fillies Farm in Miami (Frank Smathers' 100 cultivars of the world's best mangos), there were last season's pummelos still hanging on the tree. Smathers was in North Carolina for the summer. Lychee insects A, B, C, D and E had just been sent to the Smithsonian for I.D. I went around the farm and collected neglected citrus fruit. Ran it through the blender, skin and all. Strained it and sprayed the lychee trees to make it difficult for the lychee insects to find their next meal. I took one of the 'Hirada Britan' pummelos to Lon Kong who grew up in Thailand and when she reported that was the juiciest, sweetest pummelo she had ever eaten (although it had hung on the tree six months past ripening), I wanted to know what rootstock made it so. (This was 20 years before pummelos showed up in Publix.)

When I girdled the tree below the graft and cut the root, I was surprised it was grafted onto 'rough lemon.' Historically 'rough lemon' is the rootstock used for oranges on the sandy rolling hill in the middle of the state and sour orange is the preferred rootstock around Fort Pierce on soils flatter, wetter, and more organic. Oranges grafted onto 'rough lemon' makes a very vigorous tree, large fruit and more watery than oranges on Sour Orange, but grafted to pummelo the 6 ft. tall, 12 ft. wide specimen looked like a bonsai and the fruit was not dry and ricey like most pummelos become when not promptly harvested.

When I lived in Miami, I met a retiree in Homestead who wanted to open a citrus nursery. Good, we need someone to grow dooryard citrus on rootstock adapted to our 8.2 pH oolite. Most South Florida nurserymen go upstate to a big citrus nursery and get a bargain on the culls someone who knows what he's doing left behind when he bought a few thousand trees, but left the pot bound behind that are going to cause "young tree decline."

I was recommending 'Cleopatra' mandarin rootstocks for small, sweeter fruit that hold juicier longer where all the fruit are not going to be picked the same day. I also recommended my favorite 'Minneola' tangelo and 'Page' orange ($\frac{3}{4}$ 'Cleopatra' tangerine and $\frac{1}{4}$ 'Duncan' grapefruit). I was happy to have someone to grow the best dooryard citrus on the best dooryard rootstock.

I was overseas for a year and when I returned to Miami, my best friend, Dr. Eric Cohen had bought a collection of citrus trees from my recommended grower. Only, the beautiful tangerines were totally without juice. The nurseryman told Dr. Cohen his customers came in wanting a tangerine and an orange and knew nothing about cultivars or 'Page' oranges that weren't oranges, and they certainly didn't ask what rootstock they were grafted onto. So, the coached citrus nurseryman took all the labels off. I don't know where he came up with *Citrus macrophylla* rootstock, but after the second season of dry tangerines and oranges, Dr. Cohen took everything out and started over.

At the left of the entrance to the Kampong there used to be a hedge on box orange (*Severinia buxifolia*). It only grew four or five feet tall, never needing pruning, so it was popular for hedges. In class at the University of Florida, Gainesville, we were taught that citrus grafted onto Box Orange remained dwarf. In summer school we were at the Winterhaven Research Center where we could observe the citrus rootstock trails where there were three replications of 'Duncan' grapefruit on sour orange rootstock, three replications on rough lemon and dozens of other combinations. When Dr. Phillips pointed out the three 'Duncan' on box orange, it was obvious they were by far the largest grapefruit trees on any of the rootstocks. I wanted to believe what I had been taught and I figured Dr. Phillips had misread the rootstock map he had in hand. Dr. Phillips and the students left me behind until I found the evidence I needed: Box orange suckers under one of the three largest trees in the rootstock trials.

Common Grafting Misconceptions Continued....

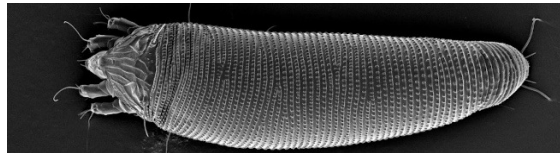
When I was new at Fairchild Garden in 1976, I grafted sapodilla onto wild dilly. Four to six sapodilla seedlings can cover an acre in 25 years. The wild dillies (*Manilkara bahamensis*) of the Florida Keys grow very slow. The specimen at the Kampong planted before David Fairchild died in 1955, (more than 65-year-old) has a 5-inch DBH trunk, is 15 ft. high and 15 ft. wide in 2020. Thinking this dwarf, slow growing tree would dwarf anything grafted onto it, Dr. John Popenoe, director of Fairchild Garden, gave me 5 seedlings already several years old, but not 10-inches tall. Only one of the grafts survived to be planted at Montgomery Foundation. I have not measured its growth, but from the time it was put in the ground, the growth of the sapodilla was accelerated, not slowed, by the wild dilly root.

You cannot predict, without trying, that because pond apple is native to Florida it is the best rootstock for atemoyas, 'Geffner' and 'African Pride' or any other *Annona* you want to graft. Dr. Carl Campbell had a successful graft of 'Geffner' on pond apple at his house, but when I tried it with Miami's Rare Fruit Council at the USDA, the grafts took, grew about a meter and died.

Members of Miami's RFC Board read that report and said, "You have to do it over." 'Nope I learned what I needed to know." Next, I tried *Annona montana* which can take South Florida's cold winters and 8.2 soil pH. Gary Zill grafted 4 or 5 acres of atemoyas onto pond apple for Mark Ellenby in the late 1970's. About ¼ of them snapped off at the graft union. Gary said he would be glad to replace those lost with more on pond apple root because the hybrid sugar apple x cherimoya (atemoya) is new on the planet and we haven't researched appropriate rootstock.

Damaging Lychee Erinose Mite Found in Miami-Dade County

By Jeff Wasielewski, February 24, 2020



The Lychee Erinose Mite (LEM) [*Aceria litchi*] was found in a backyard lychee tree in the northern portion of Miami-Dade County, FL in February 2020. LEM was previously found in Lee County on Pine Island in February 2018, and lychee fruit and plant parts are still currently under quarantine in Lee County. Until now, the pest has been found in several other counties, including West Palm, but had not been found in Miami-Dade County.

Symptoms of LEM are typically on new leaves and include small blisters with silver white colored hairs on the underside of the leaves. As the infestation progresses, a reddish-brown hair mass develops and can cover the entire leaf, which may become distorted or curled.



LEM on very young fruit.

Photo Credit:
Daniel Carrillo



The hairy "erinea" can cover stems, flowers and fruit.

Photo Credit:
Daniel Carrillo

The mite can move via air currents, honeybees, or humans touching the symptomatic leaves. If you suspect your tree has LEM, do not touch the plant as you can spread the mite. Please contact FDACS – DPI at 1-888-397-1517 or DPIHelpline@FDACS.gov immediately, or contact Jeff Wasielewski of the University of Florida at 305-248-3311, ext. 227 or sflhort@ufl.edu.

Second Generation of Desert Locust Swarm East Africa

First came the floods from excessive rains that swamped the bean and corn fields and created the perfect breeding ground for the desert Locust [FGSWF, March 2020, page 8] on the horn of Africa. Now their offspring are threatening a second wave, twenty times larger than before. While the COVID-19 has, by April 30th, infected 30,000 people with some 1430 recorded deaths, they are anticipated to climb significantly. The timing could not be worse as farmers are still battling the first generation of locust. The UN's World Food Program Agency estimates that as many as 130-million Africans could, as a result of the insect infestation, be pushed to the brink of starvation. It is believed that hunger will kill many more people than COVID-19. Swarms of over a square-kilometer (just over a third of a square mile) in size have been spotted, which can consume as much food as 35,000 people. The burden of contending with COVID-19 has severely limited the resources to contend with the swarms of locust in Kenya, Ethiopia, and Uganda. Besides the health disaster caused by COVID-19 the security and political strife in Yemen and Somalia has further hampered that fight against the swarms of locust. If the third generation increases another twenty times as predicted, it would be some 400 times the original locust infestation.

Source: Wall Street Journal, World News, April 30, 2020

Accelerated Deforestation of the Amazon River Basin

Hundreds of environmental enforcement agents have been sidelined due to the COVID-19 pandemic and deforestation of Brazil's Amazon Basin has increased at the greatest rate since 2008, as confirmed by satellite imagery. Environmentalist and European leaders believe it is because of President Jair Bolsonaro pro-development rhetoric [FGSWF, March 2020, page 8] that has emboldened loggers as well as budget cuts to Brazil's Environmental enforcement agency. The Basin spreads across nine South American countries, with more than half its area in Brazil. The Basin helps to regulate global temperatures by absorbing approximately 5% of all the world's carbon dioxide emissions. It is also home to more than 20 million inhabitants. The destruction last year was symbolized by the many fires whose smoke blackened the skies over cities far to the south, which sparked world-wide outrage. Mr. Bolsonaro's proposed Bill to deed thousands of acres within the Basin to farmers is currently held up Congress. Its opponents say the Bill would effectively pardon people who have illegally cleared the trees and will cause yet further destruction of the rainforest. Source: Wall Street Journal, April 2020

New World Screwworm Flies

Cochliomyia is in the family Calliphoridae, which are also known as blowflies, in the order Diptera. One of four species *C. hominivorax* is known as the 'primary screwworm' because its larvae produce myiasis (a parasitic infestation of the body of a live animal which grow inside the host) while feeding on living tissue. The larvae are renowned for eating and infesting the flesh of living organisms, primarily warmblood animals. The screwworm possesses small spines on each body segment that resemble a screw's threads. After the larvae hatch, they burrow deeply into a wound, perpendicular to the skin's surface, eating into the live flesh, resembling a screw driven into an object.

Entomologists Edward F. Knipling and Raymond C. Bushland proposed a 'Sterile Insect Technique,' involved the irradiating of a huge number of male flies as breeding time approached, thus the majority of female flies lay only sterile eggs. Because the agricultural industry was losing millions of dollars annually from 'fly-struck' animals, the technique was quickly approved for testing. It was first applied on a large scale in Florida in the 1950s, due both to the severity of the problem there and to the state's near island-type geography, allowing for the relative isolation of the Florida screwworm population. Eradication of Florida's primary screwworm population was completed in 1959. The program was then applied throughout the southern United States, and eventually adopted throughout much of Mexico in 1972 and parts of Central and South America. The primary screwworm was completely eradicated from the southern United States in 1966 and from Mexico in 1991. Livestock continues to be vulnerable however, and strict laws regarding animal inspection and reporting of suspected infestations remain in place even today.

Growing Eggplants and Tomatoes on the Same 'Tree'

Eric Bina's perseverance and determination has finally paid off at the Cornerstone Nursery. As shown in the photograph, there are both ripe oriental eggplants and cherry tomatoes on the same Devil Plant (*Solanum capsicoides*), 'perennial eggplant' rootstock.

The new fruit blossoms in the month of May is a good indication that they will be ever-bearing, producing fruits year-round. Eric has reported that the scion grafts are usually weak, therefore wood stick splints tied with green landscaping tape have been provided to reinforce each graft.

Other challenges that have been experienced is that the scions grow much more quickly than does the rootstock, and the fruit on the scions grow on the new green soft portions compared to the older woody portion of the rootstock. Appropriate pinning methods may be needed to be developed to maximize the life of the scions and fruit production.



When people refer to "devil plants" for eggplant grafting, they may be referring or be using any of the "devil plants" in this family – Devil's apple (*Solanum capsicoides*), Devil's fig (*Solanum torvum*) or Giant devil's fig (*Solanum chrysotrichum*).

All devil plants are members of the Solanaceae (nightshade) family of plants, which also includes tomato, potato, eggplant, chilli peppers, capsicum, tobacco, petunias and many others. That is why one can graft eggplants and tomatoes onto them, because they are related.

The Devil Plant (*Solanum capsicoides*), which was used by Eric for grafting, is a native of South America and grows as a perennial bush or small tree growing up to 3 meters high. The botanical name *Solanum aculeatissimum* is used to describe *Solanum capsicoides*, which also goes under the names of Cockroach berry, Indian Love Apple, Soda Apple, Devils Apple and Devil Plant.

Devil's fig (*Solanum torvum*), commonly known as turkey berry, prickly nightshade, or wild eggplant is an erect perennial shrub, 0.8–2.5 meters high, native to the West Indies, which has spread to many countries with tropical climates. It is a short-lived perennial. It is reported that most plants live about 2 years. The fruit are used in Thai, Jamaican Lao and Indian cuisine. There is a general disagreement regarding the identification and botanical classification of the Giant Devil Fig (*Solanum chrysotrichum*) which has been previously wrongly classified as *Solanum hispidum*. It is a shrub or small tree which grows to about 4 meters which is native to tropical Central America.

All of these devil plants have been used around the world to graft eggplants and tomatoes, so use these varieties, they are tried and tested. Do not randomly select other wild solanum family plants for graft as other varieties of plants in nightshade will not yield successful results.



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 June 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.

REMEMBER TO RENEW YOUR MEMBERSHIP!

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VISIT US AT:
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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.