

The Fruit Growers of Southwest Florida

JANUARY 2020



Daniel Blank will address the Collier Fruit Growers at their January 21th Meeting. Daniel uses organic methods on his twenty-acre 12 Seasons Farm in Olga, south of the Caloosahatchee River. Danny is the former farm manager at ECHO in North Fort Meyers. He has a post graduate college degree in Sustainable Agriculture and has taught at Warner College and FGCU.

Danny will give us a current update of fruit trees he is growing, and the methods employed to maximize crop yields, as well as the current battle to

save the citrus industry in Florida. Farmers have found that the use of composts and frequent nutrient feedings help offset the effects associated with citrus greening. This with the phased replacement of citrus trees on a 12 to 14-year cycle has helped to perpetuate the citrus industry, but no cure of citrus greening has been found. The search for a cure has been extensive and varied. Big Ag has developed a GMO variety which splices certain spinach genes into the citrus genes, but production may take many more years before modified citrus trees are commercially available. The future of Florida citrus industry remains in question.



Collier Fruit Growers Meeting: TUESDAY, January 21st. The tasting table starts at 7:00 pm. The meeting starts at 7:30 pm at the Tree of Life Church, Life Center, 2132 Shadowlawn Dr., Naples, FL

The January 14th Meeting of the Bonita Springs Tropical Fruit Club will the held at the Revive Wellness Center, 3521 Bonita Bay Blvd., Bonita Springs. On Route 41, opposite Terry Drive, turn onto Bonita Bay Blvd. Bear left before the entrance to gated community, then turn right into Bonita Bay Executive Center. This will be an organizational meeting of the club going forward in the coming year.



Bonita Springs Tropical Fruit Club Meeting: Tuesday, January 14th. Tasting Table Begins at 6:15 pm. Meeting Starts at 7:00 pm. Revive Wellness Center, 3521 Bonita Bay Blvd. Bonita Springs, FL

Please tune into the CrowdScience Podcast 'Can I Save the Insects' re: Bees at: bbc.co.uk/sounds/play/w3csz1v1. Construction of 'Bee Hotels' is detailed on Page 7.

PRUNING - IT'S TIME! Grapes, Peaches, and Nectarines! Each has a very particular way to

BURDS' NEST OF INFORMATION THIS and THAT FOR JANUARY



be pruned. Check reliable information on how it should be done.

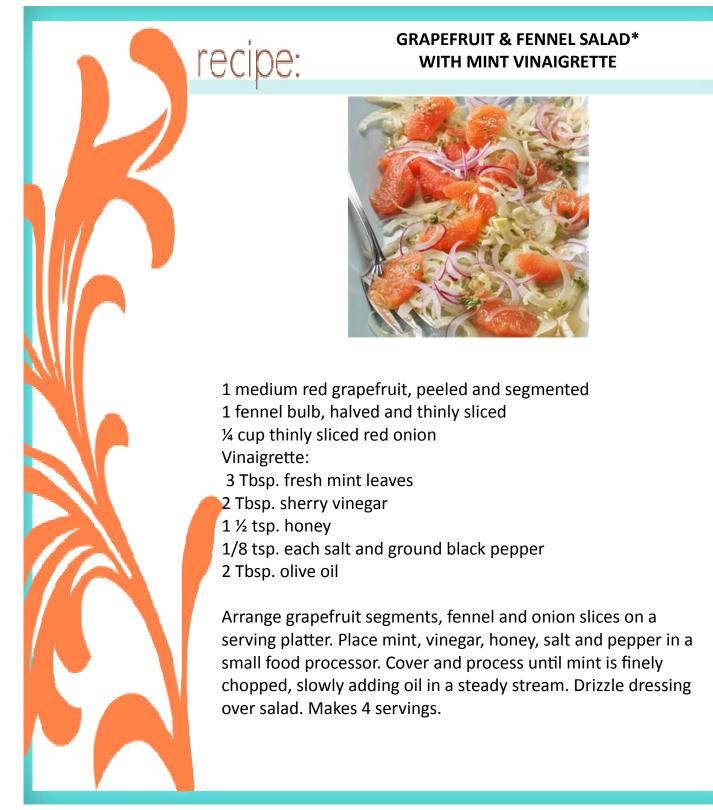
MANGOS are just beginning to bloom! The fall heat and crop

abundance last year has delayed this year's crop. Now is the time to fertilize your mango trees with 0-0-22 granular fertilizer (available from Helena Fertilizer Company in Immokalee). Always make sure that any potassium fertilizer used is derived from Potassium Dioxide as K2O, <u>NOT</u> Potassium Chloride PCI. Apply micro-nutrients plus iron in either granular or foliar spray form. Hang perforated water bottles containing a small amount of old fish or meat and water in the mango trees to attract the blow flies which pollinate the flowers.

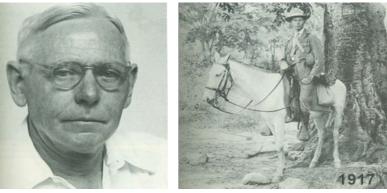
COLD PROTECTION: Be prepared! if you don't need it, yea yea, **BUT** if a really cold night is coming, water at the highest temp of the day, 20 minutes is enough, will help. Covering the trees if you can, especially those that suffer at 40F <u>but **plastic should NEVER be used.**</u> Have the seam on the south east side because cold wind will come from the north. If it's a really strong "noreaster" then check for salt on the leaves, especially on Lychees and Jaboticabas and Jackfruit.

RECIPE OF THE MONTH:

This refreshing salad fits the bill for a low calorie post-holiday recipe. It is also a way to use red grapefruit, which are so abundant this time of year. The recipe was originally published in the Dec. 2015 issue of <u>Taste of</u> <u>Home</u> magazine.



Wilson Popenoe (1892-1975)



Frederick Wilson Popence was born in Topeka, Kansas on March 9, 1892, into a family of successful entrepreneurs. He was a botanist, agronomist and teacher who carried out the majority of his scientific activities in Latin America and the Caribbean, including Honduras. Beginning in 1913, he explored the flora of Central and South America as a researcher for the United States Department of Agriculture (USDA). The United Fruit Company hired him as a general agronomist in 1925, and part of his work involved founding Lancetilla Valley Experimental Station where he collected exotic plants and trees from throughout the tropical world. The Station began with the objective of studying endemic diseases affecting banana plantations and at present is a protected area that promotes environmental protection.

Years later, Samuel Zemurray, the United Fruit Company CEO and his daughter, Doris Z. Stone, came up with the idea of establishing an agricultural school and decided that Popenoe had all the qualities to lead the new institution. This unique scientist with his non-academic, practical background was perfectly suited to design an educational model that combined theory with practice that Zemurray envisioned for the agricultural school, Zamorano.

Dr. Popenoe was well known in the region as a result of 30 years of experience gained during extended missions as an agricultural explorer in the tropics of the Americas. He had carried out studies in different areas of botany: pharmaceutical, agricultural, ornamental and forest-related and had conducted research projects in fruit cultivation in the Americas, Asia and Europe.

Dr. Popenoe married three times and fathered five children with his first wife, Dorothy K. Hughes: Peter, Nancy, Sally, Marion and Hugh. Hugh Popenoe was Chairman of the Board of Trustees and Trustee Emeritus of Zamorano.

Dr. Popenoe received three honorary doctorates from the *Universidad Mayor de San Marcos* in Lima, Peru, from Pomona College, now California Polytechnic University, in Pomona, California and from the University of Florida in Gainesville, Florida.

During his lifetime he won 22 awards, including the Rank of Commander in the "Order of Francisco Morazan" conferred by the Honduran Government at the same time as Doris Z. Stone received the same award.

His accomplishments also include 72 publications, including manuals, books and newsletters, including three manuals in Spanish on avocado growing, fruit culture in Central America and a manual of tropical and subtropical fruits: *El Aguacate: su cultivo y distribución, Fruticultura centroamericana y Manual de frutas tropicales y subtropicales.*

"Wilson Popenoe, in addition to being first director, was an educator always obsessed by constant, arduous and disciplined work," said Dr. Abraham Arce (Class of '46), graduate of the first Zamorano class.

Dr. Popenoe died at the age of 83 in the City of Antigua, Guatemala where he is buried. His life and history are closely intertwined with Zamorano. His inventive, energetic and entrepreneurial spirit gave him the tools to implement the philosophy of Learning by Doing, which remains a mainstay of the process of forming of young American leaders at Zamorano.

Krome Memorial Section

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Ground Covers for Organic Mango Production in South Florida

Noris Ledesma^{*1}, Richard J. Campbell¹, and Jeff Wasielewski²

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ADDITIONAL INDEX WORDS. Mangifera indica, Gladularia maritime, Minosa pudica, Arachi pintoi, Evolvulus glomeratus, aggressive weeds

Mango (*Mangifera indica*) is grown in South Florida primarily in Miami-Dade, Lee and Palm Beach Counties. There is an increasing demand for organic mango production to expand the South Florida industry in response to consumer demand for organic fruit. Organic production also creates a new category for mangos in marketing of the fruit. Organic herbicides can be effective in controlling weeds, but there are limitations, as well as efficacy and economic considerations for commercial use. In this study, four species of ground covers were evaluated to measure their efficiency related to mango growing under South Florida conditions. The trial was conducted using beach verbena (*Gladularia maritime*), perennial peanut (*Arachi pintoi*), dwarf mimosa (*Minosa pudica*), and blue daze (*Evolvulus glomeratus*). Time of establishment, growth efficiency, and competition from weeds were evaluated. Perennial peanut (*Arachi pintoi*) variety 'Amarillo', and dwarf mimosa (*Minosa pudica*) covers used in row middles had the best performance compared with other species in study. They established quickly and controlled weeds with the best efficiency.

The mango continues to grow in importance in the local market due to the local food movement and the poor quality of imported mangos. There is an interest in new mango plantings in South Florida, particularly in terms of specialty varieties and new categories of mature-green and organic mangos. For smallscale specialty mango production in South Florida to succeed, growers should actively seek alternatives to increase profitability (Ledesma and Campbell, 2016).

Organic mango production continues to expand in South Florida in response to consumer demand for organic fruit. New horticultural practices are necessary to be able to have proper management for this specific growing method. Weed control can be a challenge to combine with organic certifications. There are some alternatives for organic growers in terms of weed control including hand weeding, but that can be expensive and time consuming on all but the smallest of scales. Herbicides meeting organic standards are another option but there are limitations. Organic herbicides are considered to be efficacious if there is sufficient volume and concentration delivered directly to the weeds. These herbicides are expensive and may not be affordable for commercial crop production at this time (W. Thomas Lanini, 2012).

Ground covers can be used wherever grass does not grow, where tree roots offer competition, in lieu of mulch, or where a single large mass of plants is preferred over a variety of plants. Colorful foliage can contrast or complement the aesthetics of the orchard and the flowers can add a friendly habitat for pollinators. There are plants for wet areas, dry areas, or cool shady areas. One must match the needs of the ground cover with the situation and the needs of the crop (Granatstein, et al., 2013).

Four species of ground cover were studied to evaluate their efficiency related to a mango grove under South Florida conditions. Beach verbena (*Gladularia maritime*), perennial peanut (*Arachi pintoi*, dwarf mimosa (*Minosa pudica*), and blue daze (*Evolvulus glomeratus*).

Materials and Methods

The study was conducted at 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.

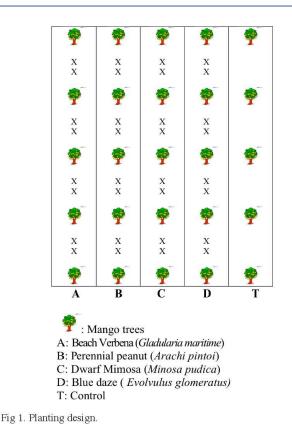
Land preparation and edaphic conditions

The experimental site consisted of a crushed oolitic limestone substrate that had been 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 unadulterated.

Planting of ground covers

One-gallon container sized beach verbena (*Gladularia maritime*), perennial peanut (*Arachi pintoi*), dwarf mimosa (*Minosa pudica*), and blue daze (*Evolvulus glomeratus*) were planted within the rows of the orchard. The planting design includes plots of 4 x 12 ft per species of ground cover. Each plot contained 8 ground cover plants (Fig. 1). The area between the rows was consistently mowed and allowed to populate with natural

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vegetation. At the end of the experiment, the row middles had mostly filled in with grass, which was mowed once a month.

Beach Verbena (Gladularia maritime)

Endemic to Florida, and listed as a state endangered species, it occurs on the east coast of Florida on beach dunes, though it has been reported in Levy County on Florida's west coast. Beach verbena has purple or lavender flowers born in clusters at the top of this 12 in. tall ground cover, which stand out against the fine-textured foliage. Stems creep along the ground and root to bind the sand together. Plants grow to 1 ft tall and spread 3–5 ft. The plant is reported as salt and drought tolerant. It adds color to the ground year-round.

Perennial Peanut (Arachi pintoi variety 'Amarillo')

Ornamental peanut is an attractive, low-maintenance groundcover, used in fruit groves, coffee and other crops throughout the world. This drought-tolerant, hardy perennial requires no supplemental water once established. Perennial peanut originates from central Brazil and makes its own nitrogen. It has since been distributed to Argentina, Australia, Colombia, the United States, and more recently to South East Asia, Central America, and the Pacific.

Dwarf Mimosa (Minosa pudica)

This plant is native to South and Central America. It grows mostly in shady areas, under trees or shrubs, and is recommended as a mat-forming groundcover that withstands foot traffic and mowing. It is the larval food source for the little Sulphur butterfly. *Mimosa pudica* spreads by rhizomes that produce long tap roots at the nodes. It grows in well-drained soils and is highly drought tolerant once established, making it also suitable for dry, sandy areas. This species has been known to be invasive under certain conditions and caution should be used when planting.

Blue Daze (Evolvulus glomeratus)

Blue daze is a low-growing evergreen subshrub native to Brazil and Paraguay. The plant grows in a low, spreading mound, up to 2-3 ft (0.6–0.9 m) in diameter, but no more than 1 ft (0.3 m) tall. The stems become woody as they age. Leaves and stems are densely downy, covered with blue attractive flowers that bloom continuously. Each flower lasts only a day, opening in the morning and closing by afternoon. It is highly tolerant of salt, and grows well in full sun in poor sandy soils that are well drained.

Establishment and aftercare

No fertilizers were applied. The soil was a result of previous levelling of the oolitic limestone being mixed with organic material. Planting of the four species took place in Mar. 2015. A microaspersion irrigation system was used for the mangos and the same system was used for the first two months after planting on the ground covers. Weeding was necessary until the plants became established. The presence of weeds was surveyed in each plot. The most common weeds were identified. Growth of the four cover species was measured every 2 weeks from Mar. 2015 to Nov. 2015.

Results and Discussion

Ground cover in a mango grove must be managed. A grove can be divided into two distinct areas: the area between the tree rows, and the area directly underneath the trees.

The plants needed weeding every month especially following initial planting and during early establishment. Watering was required in first two months, if there was no rainfall. The study ran only during the warm months of the year. The results would have been influenced by lower temperatures found in the winter.

The perennial peanut and dwarf mimosa ground covers used in row middles had the best performance. They covered the area of 60 sq. feet by week 25 after planting (Fig. 2). They were

Table 1. Square	e footage of	growth of	each ground	cover
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	Growth (ft ²)					
Week	Beach Verbena	Perennial Peanut	Dwarf Mimosa	Blue Daze		
1	1	1	1	1		
3	1	2	1.5	1		
5	3	2.5	2.2	1.5		
7	5	3	3	2		
9	3	5	6	2.5		
11	0	6.5	10	2.5		
13	0	10	15	5		
15	0	22	19	6.5		
17	0	28	26	8		
19	0	39	30	10		
21	0	41	40	15		
23	0	50	45	17		
25	0	54	48	18		
27	0	55	48	20		
29	0	56	50	21		
31	0	58	52	21		

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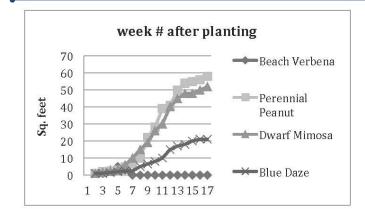


Fig 2. Growth Comparison.

established by the fifth week. After that, they started growing and spreading in the area (Table 1). The perennial peanut kept growing even with a nutritional deficiency during the period of the study.

The perennial peanut and dwarf mimosa both controlled the weeds more efficiently than blue daze (Table 2). After 31 weeks, the average amount of weeds removed in each ground cover plot were two in the perennial peanut plot, three in the dwarf mimosa plot, as compared to 30 weeds removed in the beach verbena plot and 31 in the control plot (Fig. 3). The use of perennial peanut evokes questions about mango nutrition due to its habit of nitrogen fixing. Future studies must be conducted to evaluate production of mangos using perennial peanut and the interaction with the nutrition of the grove and the subsequent fruit quality.

The blue daze had a spreading mound habit and kept individual plants separate. The plants grew up to 2 ft in diameter, and stopped growing. Bees and other local pollinators frequently visited them.

The beach verbena declined by the second month of the experiment. A ggressive weeds competed with it and it died, save one individual plant. The beach verbena revived after 8 months of collecting data.

Table 2. Number of weeds removed in each ground cover plot.

Weed	Beach	Perennial	Dwarf	Blue	
occurrence	Verbena	Peanut	Mimosa	Daze	Control
Week					
1	0	0	0	0	0
3	2	9	8	9	15
5	3	12	15	12	17
7	2	13	15	14	22
9	3	9	11	15	26
11	5	6	5	19	25
13	8	7	6	22	22
15	15	9	8	18	25
17	12	9	8	15	25
19	15	11	9	15	25
21	21	10	10	15	30
23	20	10	6	18	28
25	29	4	5	18	30
27	32	5	4	18	29
29	32	4	4	16	30
31	30	2	3	15	31

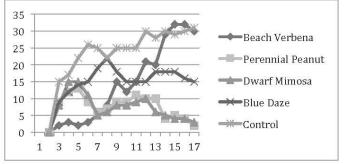


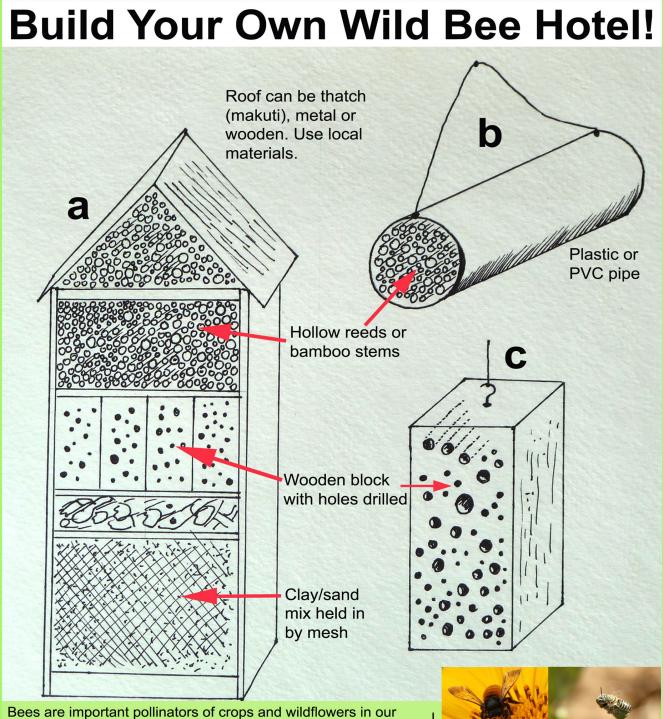
Fig.3. Weed frequency.

Dwarf mimosa was the most tolerant of the poor growing conditions, but was difficult to locate in nurseries and was also the most expensive. It also spread into the row middles and was tolerant of heavy traffic and mowing. It was dense enough to crowd out weeds. This species also attracted more pollinators as the perennial peanut was not attractive to pollinators. These species also have the abilty to improve soil structure and can be a host for beneficial predatory insects.

The most common aggressive weeds identified were red morning-glory (*Ipomoea coccinea* L.), air potato (*Dioscorea bulbifera* L.), balsam pear (*Momordica charantia*), bull thistle (*Cirsium vulgare*), dandelion (*Taraxacum officinale*) and black nightshade (*Solanum americanum*).

Literature Cited

- Granatstein D, E. Kirby, and H. Willer. 2013. Global area and trends of organic fruit production. Acta Hort. 438 1001:383–394
- Ledesma, N. and R.J. Campbell, 2016. Economic Feasibility of Small-Scale Specialty Mango Production in South Florida. Proc. Fla. State Hort. Soc. 129: in press.
- W. Thomas Lanini, University of California, UCNFA News. 5 Apr. 2012.



Bees are important pollinators of crops and wildflowers in our farms and gardens. You can help wild solitary bees by providing a safe nesting site for them:

(a) This is the deluxe 'Bee Hotel'. Adjust the size to your local materials. The different layers provide nesting sites for different species of bees. Place in a sheltered area where it will not be disturbed. This will provide a nesting site for many years.
(b) A simple plastic or PVC pipe packed with hollow reeds or bamboo stems of assorted sizes. Hang or tie to tree/fence.
(c) Wooden block or post or old stem/trunk with holes of different sizes drilled in it. Hang or tie in a sheltered area.

Above: Leafcutter bees are some of the solitary bees that will use the Bee Hotel **For more information:**

insects@naturekenya.org



Tour of Vegetable Garden and Fruit Orchard at Shangri-La Resort and Spa

Conducted by Cecelia Morales, Organic Garden Manager, on December 12, 2019



A brief history of the Shangri-La Springs



About twenty persons gathered for the tour



A wide view of the vegetable garden



A Mamey Sapota Tree



Crafton holding a lettuce leaf



Canistels still hanging on the tree

The tour was very informative for all the participants. A warm thanks to Cecelia for her time and efforts. Please keep up the good work and enjoy the Holiday Season.

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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 Magazine, *28410 Bonita Crossing Blvd.*, *#11*, 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 March 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.

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JANUARY CALENDAR OF EVENTS

- Tuesday 7 Monthly Meeting: Caloosa Rare Fruit Exchange, 7:00 PM, Fort Myers-Lee County Garden Council Bldg., 2166 Virginia Ave., Fort Myers.
- Tuesday 14 Monthly Meeting: **Bonita Springs Tropical Fruit Club**, Tasting Table 6:15 PM, Meeting &:00 PM: Revive Wellness Center, 3521 Bonita Bay Blvd., Bonita Springs. On Route 41, opposite Terry Drive, turn onto Bonita Bay Blvd. Bear left before the entrance to the gated community, then turn right into the Bonita Bay Executive Center. This will be an organizational meeting.
- Wednesday 15 Monthly Meeting: **Rare Fruit Council International**, **Miami**, 7:00 PM in the Science Village Classroom next to the Butterfly Exhibit at Fairchild Tropical Botanic Garden, 10901 Old Cutler Road, Coral Gables.
- Tuesday 21 Monthly Meeting: **Collier Fruit Growers**, Tasting Table 7:00 PM, Formal Meeting 7:30 PM: Tree of Life Church, Life Center, 2132 Shadowlawn Drive. Daniel Blank of 12 Seasons Farm will be the speaker.
- Friday 24 Plant Sale: Shangri-La Springs Hotel and Spa, 10:00 AM to 2:00 PM, 27750 Old 41 Road. Bonita Springs.



Fruits which Ripen in January:

Avocado, banana, black sapote, canistel, carambola, citrus, coconut, guava, macadamia nut, mamey sapote, papaya, sapodilla, pomegranate, soursop.

Annual Fruits: Eggplant, winter squash (Cushaw/Seminole pumpkin), pigeon pea, bell pepper, tomato.

General Newsletter Publication Notes

Someone is needed to prepare and submit the monthly food recipes. In the meantime, recipes from prior newsletters with be republished each month. If you have a favorite recipe please submit it for the newsletter.

Members are encouraged to submit articles and news worthy items to rtaylorrm@comcast.net for publication in subsequent issues of the newsletter.

The publication of the article on 'Solar Powered Irrigation Systems' has delayed, but not forgotten. It has been difficult identifying all the necessary system components, along with the preparation of accurate assembly and wiring diagrams.

Dr. Noris Ledesma deserves special thanks for granting permission to publish her articles each month in this newsletter.

A combined March/April issue of newsletter will be published due to limited resources and prior commitments of the staff.

As in prior years there will be no newsletter published for August.



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**: <u>https://www.facebook.com/groups/BSTFC/events/</u> **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): <u>https://www.BonitaSpringsTropicalFruitClub.com/</u>

Officers and Board of Directors:

Jorge Sanchez - Interim President Jorge Sanchez - Vice President Micah Bishop - Treasurer Lisa Mesmer - Secretary Crafton Clift - Director Luis Garrido - Director Berto Silva - Director



Like Us on Facebook! <u>https://www.facebook.com/groups/BSTFC/</u>

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!

2020 CFG BOARD OF DIRECTORS

OFFICERS:

President, Rodger Taylor - 239-384-9630 Bonnie Hawkins, Vice President Melissa Parsons, Treasurer Lisa Hare, Secretary

DIRECTORS AT LARGE

GROW FRUIT!

VISIT US AT: www.collierfruit.org Crafton Clift, Director Micah Bishop, Director Jorge Sanchez, Director



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.