The Fruit Growers of Southwest Florida

MARCH 2021

The Speaker at the Tuesday, March 16 Collier Fruit Growers Meeting will be Josh Jamison. Josh is an edible plant enthusiast and collector. Since 2013, he has been the Agriculture Manager at the h.e.a.r.t. (Hunger, Education and Resources Training) Village, a nonprofit organization in Florida that educates students planning to do international development work.

Josh is also a graduate of Warner University. He manages the demonstration gardens which host a large diversity of fruits, vegetables and other useful plants that improve the lives of people around the world. Josh has studied and grown many underutilized nutritious leaf crops, root crops, tropical/subtropical fruit, vegetables, and all kinds of other plants. His passion in life is to promote agro ecological farming as a path to local and global community restoration.

Collier Fruit Growers' NEXT Meeting:
Tuesday, March 16, 2021.
The meeting starts at 7:15 pm.
Life Center, Tree of Life Church
2132 Shadowlawn Dr., Naples, FL 34112
Please remember that it is time to pay your $15.00 renewal dues for 2021
Please mail dues to: CFG, Inc. 1944 Piccadilly Circus, Naples, FL 34112

Bonita Springs Tropical Fruit Club Meeting will be March 9, 2021.
Workshop: Tuesday, March 23, 2021.
Location: Newport Animal Hospital
Corner of Old Route 41 and Bernwood Drive
25100 Bernwood Dr., Bonita Springs, FL 34135
Please always observe the wearing of masks and social distancing.
Please remember to pay your 2021 renewal dues: $15/ individual, $25/ family

Please always observe the wearing of masks and social distancing.

BURDS' NEST OF INFORMATION

THIS and THAT FOR MARCH

LYCHEES: If they are flowering, resume a watering schedule. Lychee varieties do not bloom at the same time. Hoc Ip and Sweet Heart tend to bloom first, then Brewster followed by the Emperor. When the flowers start to open, fertilize with a good citrus fertilizer6-4-6 or 8-2-10 or 8-2-8 lightly feathered around the tree half way out from the trunk to beyond the drip line.

CITRUS: Now is the time to fertilize 6-4-6 8-10 or 8-2-8. For **CITRUS PRUNING,** the number one rule is to clean your pruning shears with rubbing alcohol or hydrogen peroxide NOT bleach. The BEST time to prune citrus is after the petals have fallen off and fruit set. Pruning before or during flowering means possible fruit has been removed. Shape the tree to resemble an open umbrella. Start when the tree is young remove branches that don't point outwards from the trunk. For **CITRUS GREENING,** the psyllids are rampant right now on the new growth. Spray with the soap and minor elements solution either early or late in the day.

RECIPE OF THE MONTH:

Pan-Seared Scallops with Tangy Florida Grapefruit-Basil Salsa

Accents the sweetness of fresh scallops in this quick and simple entrée.
Serves 4

Ingredients:

- 1 large Florida red grapefruit, peeled and sectioned.
- 2 Tbsp. chopped shallots.
- 2 Tbsp. chopped fresh basil.
- 5 tsp. olive oil, divided.
- ¼ tsp. crushed red pepper flakes.
- 1 lb. large scallops (15 to 20 count)

For the Grapefruit-Basil Salsa: Coarsely chop grapefruit sections and place in a strainer. Let stand 10 minutes. Transfer sections to a medium size bowl. Add shallots, basil, 3 teaspoons of the oil, and red pepper flakes; mix lightly. Cover and refrigerate until serving time.

In a large nonstick skillet heat the remaining 2 teaspoons of oil over medium-high heat. Pat scallops dry with paper towels; season with salt and pepper to taste. Add scallops to skillet (work in batches if necessary; do not crowd). Cook 3 minutes per side or until opaque and golden.

Transfer scallops to a platter or individual plates. Top with Grapefruit-Basil Salsa and serve warm or at room temperature.

Recipes from the Florida Department of Citrus
www.floridajuice.com

Proc. Fla. State Hort. Soc. 97:340-344. 1984.

ORIENTAL PERSIMMONS (DIOSPYROS KAKI L.) IN FLORIDA[1]

E. P. MILLER
University of Florida, IFAS,
Fruit Crops Department,
Gainesville, FL 32611

Additional index words. culture, rootstock, cultivars.

Abstract. **Twenty-three persimmon** (Diospyros kaki **L.) cultivars were evaluated in plantings at locations in north, central and south Florida. Major disease problems included** Cephalosporium **wilt,** Cercospora **leaf spot, and anthracnose fruit rot. Biennial bearing was a problem in some cultivars. Fruit thinning and maintenance of uniform soil moisture content reduced biennial bearing and vigorous upright vegetative growth. Fruit size ranged from 3.5 to 8.8 oz. and yields from 50 to 150 lb./tree. The most promising astringent cultivars were 'Giombo', 'Tannenashi', 'Eureka' and 'Sheng'. 'Ichikikeijiro', 'Jiro' and 'Fuyu' were the most promising of the non-astringent types.**

The oriental persimmon has been cultivated in Florida since the mid-1800's. Originally from China, cultivars were imported into this country in the early 19th century. Popularity in the U.S. is not great, though it is a major fruit in oriental societies. It is grown commercially in many countries and in California.

Fruit are yellow to deep orange-red and have a high sugar content. The tree is easy to grow in Florida, with a compact spreading habit, low maintenance requirements, and ornamental beauty. It is adaptable to home use and to small plantings for local production.

Persimmons may be divided into groups based on fruit astringency and fruit flesh color when seeds are present. The non-astringent types have fruit which loose their astringency while still hard, whereas fruit of astringent types must be soft or artificially treated before astringency is completely removed. The flesh color in pollination variant types has a dark tannin tissue associated with seed formation but when seeds are absent flesh is clear. Astringent pollination variant persimmons will be non-astringent in the dark fleshed seeded portions of the flesh when the fruit is still firm. Pollination constant persimmons lack the dark tannin tissue regardless of seed formation (3, 6, 12).

Persimmon production is affected by a number of factors including diseases (2, 3), freeze damage (14), pruning (9, 10), thinning (8), fruit drop (1, 8), and alternate bearing (5, 11). *Cephalosporium* wilt (2), anthracnose and *Cercospora* (3) are major fungal diseases. Freeze injury is a problem particularly in seasons with alternating warm-cold cycles (14). Alternate bearing is common in many cultivars and is related to crop load (5), seed production (1, 5), tree age or vigor (8), soil moisture (3) and pollination (4, 5, 7).

Due to an increasing interest in oriental persimmons an evaluation of cultivar performance, disease problems, alternate bearing and fruit quality were made to determine the best cultivars for use in Florida.

Materials and Methods

Evaluations were made at 4 plantings in the vicinity of Gainesville and one in Monticello, Florida. Information was gathered on plantings in Naples, Wauchula, Gulf Hammock and Anthony through personal communication. The oldest planting examined was a 25-yr-old orchard near Alachua. Trees on a hillside and its crest had been top-worked to native *D. virginiana* L. rootstock. Graft unions ranged from 2 to 5 ft above ground level. Records were kept on fruit drop, yield and quality for 10 different cultivars in 1983 and 1984. Resistance to *Cercospora* leaf spot and effects of *Cephalosporium* wilt were also noted. The orchard received no pruning, insect or disease control, supplemental fertilization or irrigation. Occasional mowing of the underbrush and grass was done.

Yields and performance of 'Tannenashi' were recorded in the 1983-84 season on top-worked trees near High Springs. Grafting was done in the winter of 1982 on *D. virginiana* trees which were approximately 7-yr old with unions in juvenile wood 5 ft from the ground. Weeds were controlled with herbicides and trees were fertilized in March and June. Late summer and fall tent caterpillar infestations were controlled using insecticides. Limbs damaged by twig girdlers were removed and burned.

A 5-yr-old orchard in Chiefland was observed in 1984. Seven different cultivars were grafted to *D. virginiana* rootstock. Unions were 6 to 24 inches from the ground. A few of the cultivars were also grafted to *D. lotus* and *D. kaki* rootstocks. Cultural practices were similar to those of the High Springs planting.

Data were collected on fruit yields and quality in 1983-84 at the University of Florida Research Center in Monticello, Florida. Seven different cultivars were propagated on *D. virginiana* and tree performance was observed. Dormant oil was applied in February, and insecticide-fungicide applications were made in April, May and June. Observations were made on *Cercospora* leaf spot infections. Fertilization and weed control were similar to the previously described plantings.

Bloom dates and fruit set, yield and quality were recorded for 17 cultivars from 1982 through 1984 in the cultivar evaluation block at the University of Florida in Gainesville. Tree growth and performance were noted from 1980-84. All trees were on *D. virginiana* stock. Graft unions ranged from 6 inches to 5 ft above ground level. Cultural practices were similar to those of the other plantings with the following exceptions. No fungicide-insecticide sprays were applied after March. Fertilizer was applied from March through August in light monthly applications based on tree size in 1984 in order to limit rapid vegetative growth and excessive vigor. Irrigation was applied in 1984 at 1/4 to 1/2 inch every 4-7 days during dry periods to maintain relatively uniform soil moisture. In 1984 winter pruning consisted of removing excessive or upright vigorous vegetative growth. Branches that crossed or tangled and the previous year's fruiting wood were also removed. Fruit thinning of some cultivars was done from 1982 to 1984.

Results and Discussion

Diseases. In the oldest orchard a significant loss occurred from *Cephlosporium* wilt. In 2 yr of observation 3 trees were killed from infections. The owner reported that over the past 10 yr other trees had died from the same cause. Cut twigs made by the twig girdler, *Onsideres cingulatus* (Shay), were seen underneath many trees in the late summer. Infections were not observed in the younger orchards.

Cephalosporium wilt, caused by *Cephalosporium diospyri* Crandall, is widely distributed on the native *D. virginiana*. Transmission to tree injuries is random and slow. Vectors include the twig girdler and the powder post beetle *Xylobiops basilaris* (Shay). Since *D. kaki* and *D. lotus* are resistant their use as rootstocks would prevent infections,

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but little is known of their performance in Florida. Burning limbs cut by the twig girdler and cutting down and destroying infected trees in and near the orchard are recommended control measures (3).

Observations were made on the effects of leaf spot caused by *Cercospora diospyri* Thuem. on persimmons. Differences in cultivar resistance were only slight with defoliation starting in September and varying in intensity related to inoculum levels from previous years. Defoliation before fruit maturity interrupted the normal ripening process; it also affected sequential ripening. Further early defoliation limited the production of the next year's fruiting wood. When spring and summer fungicide applications were used problems with leaf spot were less severe.

Anthracnose affected the fruit of many cultivars. It was most severe as a secondary pathogen gaining entry through openings in the fruit. Some of the astringent cultivars were subject to concentric growth ring cracking and anthracnose infections as ripening progressed. Anthracnose in the non-astringent cultivars was favored by distal end splitting, dehiscense from the calyx and stink bug probings.

Selection of cultivars that are not subject to cracking or openings will help in anthracnose prevention. Late season insecticides will control stink bugs and may limit the insects responsible for the spreading of *Cephalosporium* wilt.

White peach scale, *Pseudaulacaspis pentagona* (Targioni), was sometimes a problem on trees where dormant oil was not used. Limb girdling and occasionally tree death occurred as a result of scale infestations.

Freeze damage. Cold injury often occurred during winters with severe freezing. Damage ranged from a few dead pockets in the trunk to major killing of tissue throughout the tree. When winter conditions produced minor trunk damage trees grafted high on *D. virginiana* were not affected. This may be attributed to the native stock being more adapted to alternating warm cold cycles and not as likely to initiate cambial activity as the *D. kaki.*

When winter conditions were severe enough to kill major portions of trees, damage could be related to a tree's physiological condition. Previous heavy cropping especially for more than one year, or poor growing conditions the previous seasons increased a trees chances for severe freeze damage. No cultivar resistance to freeze damage was observed. In general freeze damage could be lessened by choosing orchard locations with good air drainage (14).

Biennial bearing. All cultivars were prone to biennial bearing. Off-year fruiting was characterized by either sparse bloom or fruit drop during the fruit maturation period and directly related to heavy crop loads the previous year. Heavy cropping on many cultivars limited the production of new wood with strong buds from which the next season's flowering and fruiting would occur.

The first period of drop was in mid to late April. Aborted blooms and small fruit were observed underneath the trees possibly resulting from inadequate pollination, excessive flower production (7), or flower damage by thrips (3). Other drop periods occurred in the summer and fall up until harvest. Some fruit drop at these times was related to an abrupt increase in soil moisture since drop often occurred after a heavy rain interrupted a period of dry weather. In the irrigated orchard at Gainesville and other locations where soil moisture was consistent, fruit drop was less than in areas where moisture levels fluctuated.

When parthenocarpic and seeded fruit were set on a tree, 80 to 100% of the drop consisted of the parthenocarpic fruit. When no parthenocarpic fruit were present some seeded fruit would abort. However, cultivars were much less likely to drop fruit with well-formed seed.

Although heavy seed production increases biennial bearing (5), some seed may lessen fruit drop (1, 8). The number of seed is partially determined by a cultivars seed forming ability (3). Other factors that affect seed production are the distance from the pollen source (4), quantity of male flower production (4), and efficiency of pollination (7). Cultivars have degrees of ability to set and hold parthenocarpic fruit (1, 3). Those that are medium to highly parthenocarpic should be grown with fewer pollinators than those with a low degree of parthenocarpy.

Reducing the amount of crop load through fruit or flower thinning reduces biennial bearing (9). Thinning after petal drop of 'Tannenashi' produced 3 yr of consistent cropping. Control trees had about 1/3 more fruit than thinned trees in the first and third years but produced less than 7 fruit per tree in the second year. New wood production was more consistent for thinned trees. Limiting heavy crop loads may also lessen chances of freeze damage.

Dormant pruning to remove last year's fruiting wood increases yields (9, 10). This pruning method at the evaluation block was observed for 1 yr and no conclusions could be made. Affects of the light frequent fertilizations on excessive vegetative growth or fruit drop could also not be determined.

Older trees have a greater tendency towards annual bearing (8). Cultivars 6-to-10 yr old of 'Siajo' and 'Giombo' set crops only the first and third years, whereas 15- to 20-yr-old trees had annual crops with only small reductions in the off year. However, rejuvenation pruning and crown thinning may be necessary to maintain fruiting vigor in older trees (10).

Annual bearing affected tree shape. Vigorous cultivars in the cycle of biennial bearing when forced into annual bearing by thinning, pollination or consistent soil moisture levels had a more spreading canopy. Limb crotch angles were wide and general tree shape was desirable. Excessive, upright, vigorous, vegetative growth was nonexistent on older trees, but was common on younger trees of some cultivars.

Certain cultivars were more vigorous on *D. virginiana* than when on *D. lotus* or *D. kaki.* Fruit drop of some cultivars on *D. virginiana* or *D. lotus* may decrease on *D. kaki* (13), but not enough trees existed for comparisons.

Fruit characteristics. Color of persimmon fruit when soft ripe varied in degrees of yellow, orange or red and was specific for each cultivar. It was not practical to harvest fruit when soft, but necessary for the astringent types to develop softness after picking. Astringent cultivars with 70% of their final color formed would adequately soften and lose their astringency within 5 days.

Non-astringent types could be eaten either hard or soft as astringency existed only in the immature green or partially colored fruit. For attractiveness, picking was done when the green color was mostly replaced with a 90% yellow to orange color. For softening to occur within 5 to 7 days color was mostly orange or 20-30% orange-red depending on the cultivar.

A 10-day refrigeration period at 40-45°F retarded ripening. After removal, quality was not affected but a 2- to 3-day delay in softening occurred. Soluble solids ranged from 16-27% with a 21% average of all cultivars tested. Readings were taken in the soft ripe stage. Generally fruit quality of soft fruit was similar in most cultivars. Only small differences existed in the amount of liquid or gelatinous matter of the pulp.

Long term yields were not gathered but some observations were made. Fruit size varied with crop load, but generally cultivars could be classified as small (3.5-4.6 oz), medium (5.3-6.1 oz) or large (6.7-8.8 oz) fruited. Yields

ranged from 1/2 (20-30 lb.) to 3 bushels (120-210 lb.) for trees between 5 to 20 yr old.

Fruit ripened in the fall and was classified as early (September 1-20), mid (September 21-October) or late season (November-December). Vigorous or young trees of the early ripening cultivars would sometimes ripen fruit later than normal. Various climatic conditions could change a cultivar's ripening season. Further, as tree age increased harvest duration seemed to decrease and ripening seasons tended to be earlier.

Persimmons grow in all areas of the state. However, some astringent cultivars which bloom later than others and probably have a higher chilling requirement, do not perform well in the southern regions of the state.

Cultivar characteristics. The common astringent cultivars planted in Florida are listed in order of ripening season. Further information is included in Table 1. 'Siajo' is generally recognized as having the best eating fruit of these persimmons. Soluble solids range between 24-27%. The fruit are comparatively small in size. 'Giombo' ripens a few days after 'Siajo', and is almost as sweet. Fruit have a high jelly content and a thin peel. Young trees on *D. virginiana* tend to be vigorous and biennial bearing, while older trees are quite uniform. Yields of 1 to 2 1/2 bushels were seen on young and old trees, respectively. Two trees 'Korean' and Kengsuni' or 'Kengsuni-Ban-C' were similar in performance and probably the same cultivar. Trees were upright, vigorous and biennial. Performance was not impressive. Trees of 'Great Wall' were also vigorous and biennial. Performance may improve on *D. kaki*. Fruit were small, flat, 4-sided and attractive with thin black stripes radiating from the calyx. The pulp was drier than other cultivars. 'Tannenashi' is the most popular dooryard persimmon in Florida. A single tree may be planted since 'Tannenashi' is highly parthenocarpic. Fruit were large and conic in shape and harvest may be extended over a long period. Fruit quality was not as high as other cultivars but the flesh was drier than most. The fruit are sometimes marketed locally. Crop loads are biennially heavy with a limitation of new wood formation and tree growth during heavy bearing years. 'Yamato Hyakume' has a good red coloration and often heavy crops of large fruits. Concentric growth ring cracking can occur when the fruits are large. Although it is pollination variant only a small amount of dark tannin tissue will be present when few seeds are in the

Table 1. Characteristics of astringent persimmon cultivars.

Cultivar	Fruit color[z]	Fruit size	Fruit shape[y]	Fruit cracking	Pollination type[x]	Degree of parthenocarpy	Ripening season	Length of season (wk)	Tree vigor[w]	Area of adaptation[v]
Aizumishirazu	O	S-M	R	no	PC	—	Mid	4	med	—
Costata	O	M-L	R-C	—	PC	—	Mid	—	—	All
Eureka	OR	M-L	C	no	PV	High	Mid	4	med	All
Gailey	R	S	C	yes	PV	Low	Mid	8	high	All
Giombo	O	M-L	OC	no	PC	High	Early	3	high	All
Great Wall	OR	S	F	no	PC	Low	E-M	3-4	high	C&N
Hachiya	R	M-L	OC	yes	PC	High	Mid	4	med	All
Hiratanenashi	O	M	F	no	PC	High	E-M	6	med	C&N
Korean	R	M	F	no	PC	Med	E-M	3	high	C&N
Ormond	R	S	C	—	—	—	Late	8	—	—
Sheng	O	M-L	F	no	PC	Low	Mid	3-4	med	C&N
Siajo	Y-O	S	C	no	PC	High	E-M	3-4	high	All
Tamopan	O	M-L	F	no	PC	High	Mid	3-5	high	—
Tanenashi	O-OR	M-L	OC	no	PC	High	E-M	7	low	All
Triumph	R	M-L	F	no	—	—	—	—	—	All
Yamoto Hycume	R	M-L	C	yes	PV	High	E-M	7	med	All

[z]Final dominate color of fruit when soft ripe. Y = yellow, O = orange, OR = orange red, R = red.
[y]Fruit shape is R = round, F = flat (oblate), FC = flat conic (flat but pointed on the distal end), C = conic, and O = oblong.
[x]PC = pollination constant, PV = pollination variant.
[w]Young tree vigor on *Diospyrus virginiana* rootstock with adequate pollination.
[v]All = all areas of Florida, C = central Florida, N = north Florida.

Table 2. Characteristics of non-astringent persimmon cultivars.

Cultivar	Fruit color[z]	Fruit size	Fruit shape[y]	Distal end splits	Calyx dehiscence tendency	Pollination type[x]	Degree of parthenocarpy	Tree vigor[w]	Ripening season	Length of season (wk)	Area of adaptation[v]
Fuyu 26772	R	M-L	F	Low	Small	PC	Med	Med	M-L	8	All
Fuyu 72663	R	M-L	F-FC	Med	Small	PC	Med	Med	M-L	8	All
Ichikikeijiro	OR	M-L	F	Low	Small	PC	Med	Low	Mid	4	All
Jiro	R	M-L	F	Med	Med	PC	Med	Med	Mid	5	All
Hanafuyu	OR	L	F	High	Med	PC	Med	Low	M-L	4	All
Hanagosho	R	M-L	FC	Low	Med	PC	Med	High	Mid	6	All
Shogatsu	R	M-L	FC	Low	Small	PV	Med	High	Mid	5	All

[z]Final dominate color of fruit when soft ripe. Y = yellow, O = orange, OR = orange red, R = red.
[y]Fruit shape is R = round, F = flat (oblate), FC = flat conic (flat but pointed on the distal end), C = conic, and O = oblong.
[x]PC = pollination constant, PV = pollination variant.
[w]Young tree vigor on *Diospyrus virginiana* rootstock with adequate pollination.
[v]All = all areas of Florida, C = central Florida, N = north Florida.

fruit. Tree growth and annual fruit setting ability were good under limited pollination and when on *D. virginiana* rootstock. 'Hachiya' is noted for fruit shape, size and red color. Young trees tended towards biennial bearing and heavy fruit drop on *D. virginiana*. Annual bearing and crop load may be improved on *D. kaki* (14). Fruit of 'Hiratannenashi' have a long shelf life due to a thick skin but astringency is sometimes not removed through softening. Tree shape and performance on *D. virginiana* rootstock was good. 'Eureka' has large bright orange-red fruit. The shape is flat-roundish and tucked in at the calyx. It is pollination variant but dark flesh is slight when seed set is low. Under heavy crop loads new wood production was light. 'Sheng' is a favorite fruit of many persimmon enthusiasts. The fruit was large and unusually attractive as the shape is ribbed and tucked in at the calyx. Pollination was necessary for good fruit set and under these conditions annual cropping was consistent and tree shape was excellent. 'Tamopan' has an unusual indentation around the top 1/3 of the fruit. Color is usually deep orange with brown specks on the skin. The peel is thick and the pulp is juicy. Trees are slow to come into production. 'Gailey' has long been the standard pollinizer due to the yearly abundance of male blooms. Fruit color is dull and the flesh is mostly dark regardless of the number of seeds set.

Non-astringent cultivars are listed in the order of the ripening season and in Table 2. 'Ichikikeijiro' is the earliest ripening non-astringent cultivar tested. Trees are not vigorous, even when propagated on *D. virginiana*. 'Jiro' is similar to its bud sport 'Ichikikiejiro' although tree growth is more vigorous and red color development is higher. 'Fuyu' is the most popular non-astringent persimmon in Florida. Overall it was the best cultivar with quality, consistent cropping, and tree shape all receiving high ratings. At least 4 different importations were made under the original name 'Fuyugaki'. Two were examined. A flat type with small noticeable dark streaks throughout the flesh was probably the original P.I. 26773 cultivar. It had the least distal end cracking and was judged to be the best. The other was more round and could possibly have been P.I. 72662. Tree performance on *D. virginiana* was excellent with fairly consistent yearly cropping and good tree shape. Light male flowering sometimes occurs on 'Fuyu'. 'Hanafuyu' is a late mid-season type ripening after 'Fuyu'. Consistent cropping with large fruit was observed. Growth was not vigorous, the trees were small and yields were low. 'Shogatsu' has a flatened shape and is semi-conic at the distal end. It is annually staminate flowered and has a moderate amount of male flower production. Fruit quality is fair. Old trees examined were large and over 30 ft tall. 'Hanagosho' is similar to 'Shogatsu'. The tree was more upright and male flowering was not as heavy. It is not known if 'Hanagosho' consistently produces male blooms. Fruit of 'Hanagosho' were excellent but were late to loose astringency.

Conclusions

Consistent cropping, large fruit size, high fruit quality and favorable tree growth and shape are important characteristics of persimmon cultivars. The most promising astringent cultivars are 'Giombo', 'Tanenashi', 'Eureka' and 'Sheng'. 'Yamato Hyacume' and 'Hachiya' ripen with 'Eureka' and 'Sheng' and have much better red coloration though cracking from concentric growth rings can be a problem. The most promising non-astringent cultivars for sequential ripening are 'Ichikikeijiro', 'Jiro' and 'Fuyu'.

Although only a very limited commercial market has been developed for persimmons in Florida, there is room for expansion. Fruit are popular with orientals and are generally increasing in popularity. Small crops with varying yields and quality are easy to obtain. However, for commercial success, orchard location, cultivar selection and a variety of horticultural methods, including fruit thinning and tree irrigation, to improve annual bearing and tree life should be considered.

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Ampelocissus

Even people who grow up in the tropics are for the most part aware that trees in temperate zones drop their leaves in getting ready for winter and when daylight hours lengthen and temperature get warmer, these trees push out new leaves and flowers. Buttercups, tulips, turmeric, maypops and sunchokes are examples of plants that have dormant periods to survive unfavorable cold and dry periods – or maybe they get sunlight before taller plants push out spring leaves and take it all. There is a vine in the grape family – *Ampelocissus* – that goes a step further. One day in August it looks like a normal grape vine with clusters of bright red fruit. The next day every leaf and every joint node has come unglued and the vine sections look like a pile of chicken bones. Only a tuber like a sweet potato holds the energy of the plant until next Easter when the new plant is two feet long before you see it coming. No wonder such an astute biologist as Dr. George Proctor didn't put it on his list of plants for Cayman Islands.

The Plant Book by D. J. Mabberley says there are 100 species of *Ampelocissus* in the tropics, some edible or used for medicine. Mine (from a Mennonite in Belize) is too acidic to eat.

Ampelocissus carolinus (Carolina snailseed) **Crafton Clift**

Open Letter From Crafton Clift

Grafting the Jackfuit Tree at the University of Florida Extension - Collier Facility

On Thursday, September 10th, 2020, recently retired Dr.Doug Caldwell and Dr. Steve Brady put chemical fertilizer under the jackfruit tree and stuck wire flags around the drip line to mark where the fertizer had been put. Then they cut the tree, leaving only 4-inches of the 15-inch diameter truck from which they expect sprouts to emerge. Then they will graft the sprouts. Apparently they expect Mike Benjamin to graft muliple cultivars.

I am wagging my head in dismay and disbelief. There are many species of trees, notably conifers, that never, ever would put out a sprout from such a stump. The roots would simply die of starvation.

Yesterday, that jackfruit was a healthy, functioning, complete being with a vast system of fine feeder roots capable of absorbing dissolved minerals and passing them millimeter by millimeter, cell by cell, through cell walls, through lock valves, one way up, through the xylem, up forty feet to the leaves where chlorophyll in the presence of energy of the sun, the 'Krebbs Cycle' changes those dissolved elements into carbohydrates, fats, and proteins and moves them from higher to lower concentration like a heaping teaspoon of sugar slowly lowered into a cup of coffee. Down the foods go to feed the fruits and mop like white roots, traveling down through the one-way lock valves of the phloem, higher to lower concentrations.

Now, today …

Not a single leaf …

Not a single cell of chlorophyll.

And the added salts around those fragile white roots. Why would anything go into those dead-end roots with nothing moving out? Liquids will move from higher to lower concentration -- into the dry fertilizer salts from yesterday's plump white roots.

October 2020

Processing Chocolate, Submitted by Eric Bina

URBANA – Daniel Harry Schreiber was fairly positive he's the only person in Illinois who made his own chocolate. Schreiber has reportedly died recently.

That's right, he bought fair-trade, organic cacao beans (his most recent investment came in the form of a 110-pound bag from Panama) and, through processes full of careful calculations and obvious passion, carefully transforms them into chocolate.

"Usually when people make chocolate, they were not quiet about it," said Schreiber, a 23-year-old graduate student who lived in Urbana.

Schreiber's goal was to make chocolate in the best way possible. His product was fair-trade and organic, with each batch handmade from bean to finished bar. Its flavors, he said, are more complex than those found in wine. Right now, he makes dark chocolate but is interested in learning how to make milk chocolate and even products like Nutella.

Schreiber worked hard to make his hobby work. He raised money for equipment and supplies on www.kickstarter.com. He apparently spent more money than he raised, so you might have seen him around Urbana's Market at the Square, approaching people to ask if they'd like one of the homemade chocolate bars he had in his backpack.

He started making chocolate in the summer as a diversion from his studies. "Grad school can be a depressing type of place, I think," Schreiber said. He likes hobbies with positive reinforcement – last semester, he memorized portions of James Joyce's "Ulysses."

Schreiber was a University of Illinois doctoral student in computer science. He completed his undergraduate degree in the same field at the UI. The Palo Alto, Calif., native said he is not related to the Dan Schreiber who frequently wrote letters to The News-Gazette.

Schreiber said his newest hobby was a much better topic of conversation than his research.

"I've met no one who doesn't want to talk about chocolate," Schreiber said.

And in the process, he'd plugged himself in with a community of local people who make and love food.

Blogger Jason Brechin, a Savoy resident who runs www.cleverfoodblog.com, got involved when Schreiber contacted him about supporting his chocolate-making drive on kickstarter.com. Brechin donated and wrote a blog post about Schreiber's, because he saw value in the idea.

"I kept in touch with him and met up with him once he had made a couple batches," Brechin said. "Trying his chocolate for the first time was relieving – my money wasn't wasted – and joyful – it was really good."

Brechin said he appreciates Schreiber's chocolate because each piece is different, unlike a chocolate bar from the grocery store, which is processed in a way to make each piece consistent.

"The feel of chocolate that wasn't smashed into 'perfect' particles by stainless steel mills is, for me, more attractive," Brechin said. "It's not gritty, by any means, but it has just a little texture to it that you want to feel in your mouth as you taste the different flavors from the chocolate."

(For more about how Schreiber actually makes the chocolate, please see below.)

Schreiber also connected with Bill Chapman, a chocolatier (which means he makes products from already-made chocolate) from Mahomet who is working with Schreiber on things like renting a certified commercial kitchen so they can sell their chocolate.

Chapman made some salted caramel for Schreiber to include in his chocolate bars. In his own truffles, Chapman has combined chocolate with flavors like mint, amaretto and butter rum and even things like pepper and Coca-Cola.

"If Dan can ever keep his friends from consuming all of his work, I'm looking forward to trying to match up some of these flavors with the complex chocolate Dan is creating," Chapman said.

He's also met with Laurence Mate, a Champaign man who cures and prepares meats and runs www.thislittlepiggy.us.

Mate and Schreiber have experimented with their bacon and chocolate together, and the result is a delicious blend of salty and sweet.

But chocolate is supposed to melt on one's tongue so you can taste its complex flavors, Schreiber said, so he has also experimented with things like cinnamon and sea salt, along with raisins, almonds and other add-ins.

Eventually, Schreiber would like to see if he could make chocolate work as a business. Of course, he would need to upgrade his equipment and secure financial backing.

But he felt strongly that chocolate should be made of cocoa beans and sugar, and nothing else. He loved the science of food and to make things the same way people did 1,000 years ago. However, he frowned upon what he calls "food science" and eating things made of unpronounceable ingredients.

"I don't really feel comfortable eating random acronyms," he said.

And as Chapman pointed out, Schreiber made his chocolate in a precise, carefully measured way.

"Dan's chocolate is very scientific," Chapman said. "He did a lot of background research, synthesizes what others have done and then re-engineers a better way to do things. Sometimes it works, sometimes not, but he is always thinking and tinkering."

How It Was Made:

Here's how Urbana resident Dan Schreiber made his chocolate:

He roasted cacao beans in the oven of his apartment house, checking them often with an infrared thermometer. He wanted them to reach 240 degrees, but "really, you roast by taste," he said. He used his cell phone as a kitchen timer.

Roasting the beans develops their flavor, Schreiber said, but it also makes it easier to detach the beans from the husks surrounding them. The fats in the beans warm up and melt, making the husks come off easier. The water in the beans also vaporizes, puffing up the beans and pushing the husks away.

A mill cracks the roasted beans into smaller pieces, called nibs. But because they still have their husks, Schreiber put them in a steel bowl and used a hair dryer to winnow them.

"More advanced people have special machines," he said, and he had a prototype of a device that's a little higher-tech. It involved a series of ramps and a Shop-Vac.

Next, the nibs go into a contraption Schreiber used as a melangeur-broyeur, French for "stir-smush." The base and wheels inside its bowl are made of solid granite. The motor spins the bowl and the wheels, as you probably guessed, stir and smush the nibs into chocolate liqueur.

This is the stage where the fat in the chocolate liquefies. (Fun fact: Because Schreiber had such a small chocolate operation, he used an Indian kitchen appliance, a wet grinder, as a melangeur-broyeur. Commercial versions are much bigger, he said.)

This step accomplishes two things. It refines the nibs into tiny particles, which makes the chocolate smooth on your tongue. And it conches them, which involves a stirring process that uniformly coats each molecule of cocoa powder with cocoa butter so the chocolate isn't chalky. It also burns away any bitter compounds and mellows the flavor of the chocolate.

For his Panamanian chocolate, he conched it for about nine hours. Different beans require different times in the melangeur-broyeur.

Schreiber tempered his chocolate by hand on a huge slab of marble. As it cool, it produces crystals. Chocolate can form into six different crystals as it cools. Schreiber prefers the fifth because he says it makes the chocolate more stable and shiny; it will snap when it's broken.

If the chocolate is tempered wrong, the wrong kind of crystals forms and the chocolate will melt in your hand.

Tempering is a reversible process, so if something goes wrong, Schreiber can do it again by melting the chocolate.

After the chocolate is tempered, Schreiber put it in chocolate molds and cools it for half an hour in his fridge.

Because he started making chocolate in July, he didn't anticipate the problems he'd have with temperature this fall.

"The big issue is that I'd have tempered chocolate and I'd have no way to keep it warm at that temperature," Schreiber said. It would thicken before he had a chance to mold it.

If he added anything to the chocolate – he'd tried salted caramel, bacon, almonds, raisins, sea salt, cinnamon and chili pepper – he'd add it in the mold before the chocolate cools.

Schreiber stored the chocolate in a cabinet in the basement because the temperature is more stable there. He dryly calls it his "chocolate cellar."

He then wrapped the bars in a waxy paper and wrappers designed by his friend Keihly Moore. Schreiber also kelt chocolate bars in his desk at the Siebel Center for Computer Science for the same reason as in the basement – it has a more controlled temperature than his room or kitchen.

People who worked in his building started coming to him for chocolate, and he sometimes uses it to stay awake as well. That's because chocolate contains theobromine (not caffeine, he said), which keeps you awake and has a more prolonged and gentle effect than caffeine.

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**.

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 March, 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/

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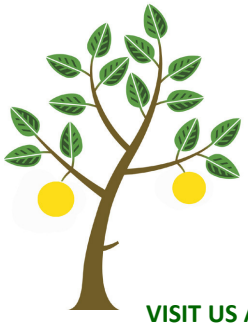
The Collier Fruit Growers Inc. (CFG) is an active organization dedicated to inform, educate and advise its members as well as the public, as to the propagation of the many varieties of fruits that can be grown in Collier County. The CFG is also actively engaged in the distribution of the many commonly 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.



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