



NEWSLETTER

JANUARY 1982

TAMPA BAY CHAPTER of the
RARE FRUIT COUNCIL INTERNATIONAL, Inc.

NOTE: EXCEPTING APRIL & MAY, ALL MEETINGS THIS YEAR SHALL BE HELD ON THE SECOND SUNDAY OF EACH MONTH.

NEXT MEETING.....SUNDAY, JANUARY 10, 1982 at 2:00 PM

MEETING PLACE.....HILLSBOROUGH COUNTY AGRICULTURAL CENTER
5339 STATE ROAD 579, SEFFNER
TAKE EXIT 8 SOUTH OFF I-4

PROGRAM.....DR. TIMOTHY CROCKER OF THE FRUIT CROPS DEPT., IFAS,
UNIVERSITY OF FLORIDA, GAINESVILLE.
Dr. Crocker's topic will be FRUITS FOR CENTRAL FLORIDA.
He will cover much of the same material as given in his
program of two years ago (1/6/80), which was so well
received. We have added a lot of new faces since then.
Dr. Crocker is a veteran speaker representing the Fruit
Crops Dept. for which he has authored and co-authored
a number of the Fruit Crops Fact Sheets available from
your county agent. Here's your chance to ask him questions.

TAMPA BAY CHAPTER CALENDAR FOR 1982 (Some of the speakers listed are only tentative
at this time.)

February 3 thru 17: Florida State Fair Booth. Elizabeth MacManus, Chairwoman

February 14: Major Harold N. (Nick) Acrivos (Retired) from Melbourne. Topic TBA.

March 14: Member A.E. Hendry speaking on his extensive trip to the Far East and
South Pacific this past year.

April 18: Gene Joyner from West Palm Beach. Topic TBA.

May 16: Gil Whitton, Extension Agent, Pinellas County. Topic TBA. We hope to schedule
this meeting at the new Agricultural Extension Building in Largo.

June 13: Dr. A.H. Krezdorn from Gainesville. Topic TBA.

West Palm Beach Field Trip, May or June: If a sufficient number of our members are
interested, we will accept Gene Joyner's invitation to visit the Palm Beach
Chapter on either the date of their annual Plant Sale or their Ice Cream
Festival (at Gene's "Unbelievable Acres".) Please contact Ray Thorndike.

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NEW MEMBERS

Elby & Betty Pence, 10508 Gibsonton Drive, Riverview 33569, Tel. 677-2378

Daniel Thornton, 4719 Oakellar Street, Tampa 33611, Tel. 839-7839

Mrs. Etta Clare Williams, 4119 Granada Street, Tampa 33609, Tel. 834-7361

Bill MacDonald, P.O. Box 332, Brandon 33511, Tel. 689-5550

PLANTING AND GRAFTING BY THE MOON AND STARS:

Best dates for success - January 1, 2, 5, 6, 28, 29.

ANNOUNCEMENTS:

Fruit and Spice Park, 24801 S.W. 187th Avenue, Homestead 33031, Tel. (305)247-5727.

January 30

PROPAGATION OF TROPICAL FRUITS

Saturday

1:00 to 4:00

Fee: \$6.00

This workshop will cover methods of propagation for many unusual fruits grown in South Florida. Included will be grafting, air-layering, cutting and seed propagation.

Each participant will receive a plant to graft and take home.

This workshop will be repeated on Saturday, February 27.

STARK BRO'S NURSERIES, Louisiana, Missouri 63353, Tel. (314)754-5511, X1000 (Customer Service) Their Spring 1982 catalog for Southern gardeners (climatic zones 8,9 & 10) is available. It lists low-chill requirement apples (Tropical Beauty, Anna & Ein Schemer), Kieffer pear, peaches, Rosborough blackberry, Dormanred tropical red raspberry, pecans, American Filbert (hazelnut), walnuts, plums, as well as rhubarb and asparagus, blueberries (Woodard & Tifblue), strawberries, grapes (muscadines), etc.

BOOK SALES: Betty Dickson, Chairwoman. Your editor has received his copy in the mail of PERSIMMONS FOR EVERYONE, by Eugene Griffith and Mary E. Griffith, published by the North American Fruit Explorers (NAFEX). So Betty should soon receive the copies ordered for resale to members if she has not already. This book is 145 pages of articles on persimmons and their uses including many, many recipes. Both the native American persimmon (Diospyros virginiana) and the Japanese persimmon or kaki (D. kaki) are covered in detail. Please contact Betty for your copy. And she still has books left over from the October Plant Sale. If you cannot see her at the meetings, she can mail them to you.

FLORIDA STATE FAIR BOOTH: Please attend the January meeting in order to sign up for volunteer duty at the Fair booth. The booth must be manned by two or more people from 10:00 am to 10:00 pm for 15 days (Feb. 3 thru 17). There are three shifts of four hours each per day. If not enough members sign up for duty, then the burden always falls on two or three conscientious individuals, which is a very sad situation. There will be a duty roster ready for names at this meeting. Our next meeting (Feb. 14) will be during the Fair. So all the business of booth preparation will have to be settled at the January meeting. Plant and fresh fruit specimens are needed for display, the more exotic the better. Volunteers for setting up the booth (and later for tear down) are desperately needed, also. Please help your Chapter as this is one of our two most important events of the year, especially since it brings us new members each year and provides us useful publicity. If you are going to miss the meeting, contact Elizabeth MacManus, Chairwoman or President Bill Lester or VP Paul Rubenstein.

FREEZE: If you suffered any damage to your rare fruit plants or noted any unusual hardness during the December 18, 19, 20 cold snap, please report same to Bob Heath. Minimum temperatures and exposure conditions must be included. We need a lot more hardness information on the plants being grown here in order to publish useful cold sensitivity ratings of plants. After any severe freeze we shall distribute a report form to be filled out. By the way, if any of your plants killed to the ground and believed to be dead at the time have now begun to recover from the freezes of January 1981 and March 1980, please report that to Bob, also.

FROM THE CRFG (California Rare Fruit Growers) Newsletter, 3rd Qtr., 1981:

A WARNING ON COMFREY
by Rick Parkhurst

According to the Oregon State University Rabbit Research Center, the herb Comfrey contains pyrrolizidine alkaloids. Repeated doses, given three times a week to rats, caused severely impaired liver function resulting in hepatocyte megalocytosis. Humans are susceptible to these alkaloids. Outbreaks of alkaloid poisoning have occurred in India, Afganistan, Africa, the West Indies and Arizona.

Dr. C.C.J. Culvenor says, "The pyrrolizidine alkaloid contained in Russian comfrey provides ground for concern at the human consumption of this plant, especially by children who have a greater sensitivity to the effects of this type of alkaloid. The effects of such alkaloids are accumulative and overt damage may be long delayed, thus preventing association with the plant cause."

Japanese workers have found Comfrey to be carcinogenic (cancer causing) to rats. Liver tumors developed in all groups fed diets containing Comfrey leaves or roots. No liver tumors occurred in control animals not fed Comfrey.

Finally, Dr. D. Crout of the University of Exeter, England has been able to demonstrate a marked reduction of alkaloid content when Comfrey is dried. Thus, he feels that occasional use of dried Comfrey, as in Comfrey tea, probably is fairly safe. Consumption of fresh green leaves or fresh roots would be much more risky

* * * * *

CREDITS: Your Editor was quite remiss in leaving out the following credits for valuable contributions to the success of our October Plant Sale. Many thanks to Harold Seekins for the fabulous job he did in making the custom sign-holding wooden pedestals. They represented a great deal of work and were much needed. Thanks also to Gerry Carroll for the use of his camper/truck for hauling apple trees to the sale - and also for his time and labor, of course. Maybe in future sales we will be better organized and retain a list of people deserving of credit for their efforts. Amazingly the work gets done even though there never seems to be enough people to do it. If there are any other glaring omissions let me know.

Thanks are due to Jane Constantine for providing such delicious treats at our refreshment table. Joe deserves thanks, too, for squeezing so much tasty orange juice to go with Jane's fabulous cakes. Members are encouraged to bring fruits and fruit products for the monthly tasting table for the education and pleasure of all.

Thanks also to Maja Byvoet, our roving Librarian who is spending some months in Hawaii, for sending us some Macadamia seed nuts for propagation. They were distributed at the past meeting. I hope Maja has combed the bookstores for useful material and has picked the Extension Service in Hawaii clean of bulletins. To any of our members who travel in the tropics and semi-tropics, please be on the lookout for rare fruit literature for our library.

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Speaking of growing seeds, it would be helpful to find more volunteers among our membership to grow seedlings, cuttings and air-layers of rare fruits for our plant exchanges and plant sales. This means in quantities of more than one or two of each. We can obtain quality seeds with a little time and effort, but it is hardly practical for general distribution at meetings. Some seeds are only viable for very short

periods after removal from the fruit, needing quick action. In their case we could not wait for the next meeting to distribute. We need people who have the time, patience and facilities for growing potted plants. At this time of year seeds need bottom heat or a warm room or greenhouse. I have about reached my limit of capacity for growing potted plants. I have in the order of 80 Miracle Fruit seedlings started, plus 47 White Sapote seedlings ready for grafting, plus 25 Feijoa seedlings (for which I am not sure there will be takers - and I may destroy them since I am running out of pots and places to put them), not to mention a dozen each of seedlings of Grumichama and Jaboticaba one to two years old. I have Pomegranates germinated and am awaiting germination of Jelly Palm (Butia capitata), Raisin tree (Hovenia dulcis), Chinese Jujube, Cocoplum, etc. It would no doubt be better to spend my time and effort on rarer and more desirable plants in some cases, but these seeds were available. If those of us who are willing to grow seedlings, cuttings, etc. for the Chapter could get together and coordinate our efforts and improve the quality of plants selected for growing, it would be much to our mutual benefit. Seeds are available commercially, from seed banks in other rare fruit groups, and from contacts in foreign countries, not to mention our own members, especially when they travel. We also need to know who among us is capable of doing reliable budding and grafting. We should propagate by graft the superior varieties that our members possess for the benefit of all. As I say, I have 47 White Sapote seedlings ready for grafting, but I am not about to try it, myself. I have yet to have my first success with any species, so am not going to waste any of these plants, which I consider very worthy of distribution. I also have the scionwood, so all I need is the expert. If there are volunteers out there for raising seedlings, etc., and for doing grafting, please advise Bob Heath or me, Ray Thorndike.

Does anyone have a bearing Kei Apple (Dovyalis caffra)? Bob Heath has a non-bearing one and needs a mate for it. It takes two plants, a male and a female, the Kei Apple being dioecious.

JANUARY PLANT DRAWING: The December drawing was apparently a success although, unfortunately, no one thought to record who got what for inclusion in the newsletter. It is becoming more difficult to round up the necessary plants for this event as it seems that only three or four of our members have plants available and we are using them up quickly. Of course, there has to be many more members actually propagating plants - that is why I have asked for them to step forward and be counted (above). The following plants are scheduled to be included this next drawing:

Miracle Fruit (<u>Synsepalum dulcificum</u>)	Grumichama (<u>Eugenia dombeyi</u>)
Pineapple (<u>Ananas comosus</u>)	Feijoa (<u>Feijoa sellowiana</u>)
Limequat	Banana
Pigeon Pea (<u>Cajanus cajan</u>)*	

* See July '81 Newsletter, Page 81-29

MEMBERSHIP DIRECTORIES AND NEWSLETTER BACKCOPIES: For new members who missed the distribution of our 1981-1982 Membership Directory earlier this past year, there will be a limited number of copies available at the next meeting. Also, there are a very limited quantity of back issues of the newsletter available for the asking, starting with the first issue, January 1981.

REPORT OF DECEMBER 6, 1981 MEETING

President Bill Lester opened the business meeting at 2:00, suggesting that members take advantage of the opportunity to use the newsletter to buy, sell or swap plants. If you are looking for specific plants, advise your Editor, Ray Thorndike.

Under new business, Ray Thorndike announced the receipt of a letter from David C. Higham of Ravenshoe, Queensland, Australia who is looking for scionwood of three Casimiroa (White Sapote) cultivars, Dade, Golden and SES#2. Ray asked that the Chapter bear the expenses of sending the material requested. A motion authorizing same was made by Joe Constantine, seconded and passed by voice vote. In return, Mr. Higham has offered to send us seeds of species of fruits grown there. He is establishing a mixed subtropical fruit orchard there on the Atherton Tableland, west of Cairns. It will be interesting to follow his progress.

The balance of the meeting was taken up by discussion of the Plant Drawing, a description of the Kohala longan to be included, and methods of cold protection of grafted plants. The meeting was then adjourned and turned over to Program Chairman, Ray Thorndike, who introduced our guest speaker, Dr. George A. Marlowe from the Bradenton Experiment Station. Dr. Marlowe gave a most interesting and well received illustrated lecture on the latest methods of seedling production.

PROGRAM: SEEDLING PRODUCTION

by Dr. George A. Marlowe

Dr. Marlowe, a vegetable specialist, began with the story of tomato production in Florida. Florida is the leading state for production of tomatoes for the fresh market, having the highest quality for table stock in the U.S. They are shipped all over the country and also flown to Europe. California production is mainly for the canning industry. The European preference for very small tomatoes has increased Florida's output of Cherry tomatoes. The fast food industry here also likes them as labor savers since they do not require slicing.

Proper variety selection is extremely important to the farmer for production reliability, disease resistance, adaptability, etc. Thus, the farmer relies heavily on the seed companies and the state universities.

Seedling transplants are quite efficient for the farmer, saving 4 to 6 weeks of growing time over seed sown in the field, and saving thousands of gallons of water, since plants in the greenhouse in containers take very little water in comparison to field grown seedlings during that time. Transplants may be produced in field beds or covered structures such as hotbeds, coldframes and greenhouses. Plants may be started in seed flats and later transferred to a wider spacing in pots, bands or trays, or they may be planted directly into containers. Plant production methods range from small, manual operations to fully automated containerized production.

In general, the principles of growing transplants from seed, bulbs, cuttings, etc. are similar. In every case the plant grower should be concerned with the management and control of plant growth. If the seedling is given too much shade, water or nitrogen, spindly stems, thin leaves and diseases may develop. If the sterilized seed flat is placed in a disease bearing situation, the contamination of the treated soil will cause a loss of this "control." Plants should be grown where full light, good ventilation, drainage, and protection from excessive rain and wind can be provided. A well grown tomato transplant, for example, when ready for field setting, should have a thick stem, light green leaves of moderate firmness, cotyledons (seed leaves) attached and in good health, a strong root system, and, usually, the first flower cluster visible but not necessarily open, and be free of disease and insects.

The uniformity of the transplants being a strict requirement, the soil or growing media used must be of uniform quality, also. Nowadays the mixtures used are generally of inert materials that will support plant life. Soil amendments, often referred to as "conditioners", are used to improve the physical properties of the medium. Sand, peat, perlite, vermiculite, sawdust, ground bark, shavings and calcined clay are examples of conditioners in common use.

Whatever the medium for growing transplants, it should have the following traits:

1. Should allow free air exchange (good aeration).
2. Should allow free and rapid water drainage.
3. Should be firm enough to hold the plant upright in position.
4. Should maintain a reasonably constant volume, wet or dry.
5. Should be free of disease organisms, insects, nematodes and weeds.
6. Should be free of excess fertilizer salts.
7. Should have a slow rate of decomposition.
8. Should be low cost, light weight and of readily available materials.
9. Should be uniform and attractive.
10. Should be of low initial fertility to permit a regulated fertilization program.

The physical characteristics most important in the manufacture of a growing medium are bulk density, water holding capacity (WHC), and cation exchange capacity (CEC). Bulk density determines the weight of the mix, the ability of the mix to hold the plant upright and the ease of handling. Bulk density generally influences aeration, the rate of water infiltration and the workability of the mix. It is generally desirable to have the mix capable of holding $\frac{1}{2}$ its volume in water.

The WHC or water holding capacity of the medium determines the amount of water held by the mix and the frequency and amount of water and soluble fertilizer salts that the grower must add. A desirable WHC would be approximately 3 gallons per cubic foot or between 30% and 60% water by volume. Organic matter holds water equivalent to several times its own weight so that well composted soil rich in organics is often used in soil mixes. In soil-less mixes, peat, vermiculite and well aged sawdust or shavings are usually added to improve the WHC.

The CEC or cation exchange capacity defines the ability of the solid particles in the medium to attract and hold nutrient ions onto their surfaces for later release to the growing plant. Soil particles normally have a negative electrical charge and will attract positively charged fertilizer ions when fertilizer salts are dissolved in water. These salts split into positive and negative ions in solution and potassium, ammonia, calcium and magnesium are some of the positive ions attracted to the negative media solids. They are held to the particle surface until displaced by other positive ions, such as hydrogen, and absorbed by the plant. Negatively charged fertilizer ions, such as nitrate (NO_3) are not held in the exchange complex but remain in solution and may leach out of the media. Humus, peat, vermiculite and clays increase the CEC, whereas perlite, sand and shavings contribute very little. CEC is usually expressed as milliequivalents (me) of nutrients per dry weight of medium. A CEC between 10 and 30 me per 100 grams of dry medium is adequate and will not burn plant roots.

One popular commercial potting mix for vegetable plants is the following: (2 bushels)

- Shredded sphagnum peat moss..... 1 bushel
- Horticultural grade (No.2) vermiculite.... 1 bushel
- Ground dolomitic limestone..... 3 ounces
- Superphosphate, 20%, powdered..... 1 ounce
- *Complete fertilizer, 5-10-5 w/minor elem. 12 ounces
- Surfactant (commercial laundry detergent.. 0.5 ounce
- *Florida farmers do not use the fertilizer in this mix, but do add micronutrients.

Generally perlite is not used because it contains a high level of manganese and fluorides, which some plants cannot tolerate. Vermiculite is preferred over sand because of the obvious weight advantage plus it is sterile, neutral in reaction, holds 3 to 4 gallons of water per cubic foot, and supplies some magnesium and potassium. Vermiculite is expanded mica, mined in Africa and North Carolina. Shredded sphagnum peat moss has a high WHC, about 10 times its dry weight, furnishes a very small amount of nitrogen, but is low in phosphorus and potassium, and is rather acid, usually below a pH of 5.2. It has fungicidal and bactericidal properties due to the acidity. Despite this quality and the relative sterility of vermiculite, treatment of the mix by heat or chemical means is required, unless the grower wishes to take a calculated risk of using a contaminated medium. If local peat is to be used without fumigation, deep mined is to be preferred over shallow mined.

The type of container used for transplants is extremely important. The traditional clay pot was replaced with wood veneer bands, paper bands, and asphalt impregnated paper bands because of the cost advantage and easier handling. Pot manufacturers responded with compressed organic matter pots (manure, peat, bagasse, etc.) which could be planted with the plant. Some of these pots even included fertilizer in their composition. Eventually the tray method, a box divided into cells or cups, evolved. Plastic pots and trays now give serious competition to wood, peat and metal containers. Latest propagation methods employ unitized trays with wedge shaped or cone shaped cells allowing rapid plant removal with the media adhering to the roots.

The vegetable grower should be aware that the size of the container has a strong influence on early crop performance. For example, to give the highest yield of early fruit, tomato plants should be allowed unchecked growth and kept in a favorable root/top balance. Plants grown under crowded conditions in severe competition with other plants will likely develop thin leaves and stems with few lateral branches.

Seed of some plants may be planted directly into containers and thinned to a desired stand later. Others may be planted in seed flats and transferred to containers when they are of proper size. It depends on the plant's tolerance to transplanting at this stage of growth. Seed flats are boxes of convenient size (often 3" x 12" x 16") containing sterile soil, sand or mix. Seedlings to be transplanted into containers must be removed gently from the media and handled by the cotyledons (seed leaves) only when placed into the prepared furrow or hole. The seedling should be gently firmed-in immediately and watered to insure good soil/root contact.

The plant growing medium should be of low initial fertility in order to permit regulation of the nutrient level by the grower to suit the stage of plant growth and environmental conditions. Nutrients may be applied in a dilute solution at each watering or at less frequent intervals. The frequency depends on plant growth needs. High analysis, complete, water-soluble, starter type fertilizers are generally used. Leaves should be rinsed off with clear water after application. Soluble salt injury can be serious and high salt index fertilizer materials (KCl, NaNO₃, etc.) should be avoided.

Seed flats may be watered by sub-irrigation, soft sprinkling or mist spray. Over- or under-watering must be avoided. The flat may be covered with clear plastic film and placed in the shade for a few days to hasten germination. The plastic must be removed as soon as the first seedlings emerge. Over-watering is more likely with container grown plants and can cause damp-off, poor root system development, and soft, weak plants. Over-watered seed flats causes nutrient leaching, and the plants may become hard and pale in color. Watering should be thorough but only as often as needed. Water early in the day so that leaves will be dry by night, lessening the possibility of disease. The amount of water to apply, of course, depends on plant need, soil drainage, and frequency of application. As usual, experience is the teacher.

MIRACLE FRUIT
(Synsepalum dulcificum)

One of a number of plants bearing fruit or leaves which, when eaten, have the property of anesthetizing the sour taste buds on the tongue so that other foods, no matter how sour, eaten during a short period thereafter will exhibit their natural sweetness and subtle flavorings. Thus, a lemon becomes a delicious new taste treat under the influence of one or more berries from the Miracle Fruit plant. Some claim an enhancement of other foods, such as white potato. Depending upon the individual and the quantity of berries consumed, the effect may last from 15 minutes to 3 hours or more.

Known in the literature since 1852, the plant is indigenous to West Africa where it has been used to make maize bread more palatable and to give sweetness to sour palm wine and beer. The plant is semi-tropical in nature, although instances are known of the plant surviving in protected locations (in the ground) as far north as the Tampa Bay region on the west coast of Florida. Extremely slow growing unless given ideal soil conditions (wet, acidic, humusy) and forced with light applications of dilute liquid fertilizer, it may only grow an inch or two the first year or so. Full grown plants are about 4 feet tall or less in tub culture. A 9" plant might bear fruit, but generally they must reach about two feet.

All efforts to isolate the sweetening principle failed until 1968. Kenzo Kurihara and Lloyd M. Beidler of the Dept. of Biological Science at Florida State Univ. (FSU), Tallahassee, reported in "Science" (P.1241, Sept. 20, 1968) that 300 berries from plants grown in FSU greenhouses were used to discover that the sweetening factor is a glycoprotein with a probable molecular weight of 44,000. This protein binds to the receptors of the tongue's taste buds and modifies their function.

Tampa Bay Chapter Newsletter
Rare Fruit Council International, Inc.
3114 Troy Avenue
Lakeland, Florida 33803

JANUARY NEWSLETTER
Editor - Ray Thorndike



NEXT MEETING:

JANUARY 10, 1982

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Temple Terrace, FL 33617