



NEWSLETTER

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

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PRESIDENT: CHARLES NOVAK

WEBSITE: www.rarefruit.org (CHARLES NOVAK)

MEETINGS ARE HELD THE 2nd SUNDAY OF THE MONTH @ 2:00 PM.

NEXT MEETING: FEB. 13 (SEE BELOW)

PROGRAM: OUR PROGRAM FOR SUNDAY FEBRUARY 13 WILL BE OUR PARTICIPATION IN THE FLORIDA STATE FAIR where we will conduct a CITRUS FRUIT TASTING CELEBRATION. This is an important, critical affair for the Club, where our expertise will be exposed to the scrutiny of many thousands of people. If we do a good job, we will show them what a great organization the Rare Fruit Council is and develop in people the importance of growing unusual fruit that we consider so interesting. On Saturday, Feb. 12, we will be picking and cleaning fruit at George & Elaine Riegler's residence. For more information, see comments below in Citrus Tasting Event at Florida State Fair. FOR DIRECTIONS TO THE RIEGLERS', SEE PAGE 05-09.

Citrus Tasting Event at the Florida State Fair Sunday, February 13, 8:30A.M. - 4PM

We are busy making preparations for this event. Arrangements are being made to have available as many varieties of citrus as we can obtain. If you would like to donate some of your extra citrus fruit please contact Charles Novak (813) 754-1399, Jimmy & Sally Lee (813) 982-9359 or Bob Heath (813) 289-1068. We will need members to help pick citrus, cut up fruit in sample size pieces on Sunday, answer questions from the public, and to help wherever needed. **Thanks** to the members who have signed up to help with this event. If you would like to volunteer (and we need a few more volunteers) please call one of the above phone numbers.

Saturday - February 12, 9 A.M., Pick fruit at George & Elaine Riegler's: Members who plan to help pick fruit at George's should meet at his place at 9 A.M. Bring your clippers, old towels for drying fruit, plastic grocery bags and cardboard boxes (if you have extra). Sandwiches and/or chicken, chips and drinks will be provided. Members may bring a side dish or a dessert to share. For questions, directions or more information call Charles Novak, Jim Lee, or Bob Heath.

Sunday - February 13, 8:30 A.M. - 4 P.M., Citrus Tasting at the Florida State Fair: Members who are helping with the Citrus Tasting should plan to be at the Family Living Center Building at **8:30 A.M.** We will be very busy as we start offering samples to the public at 10 A.M. Members who have signed up to help with this event will receive their free fair admission tickets in the mail. Also, if you have some extra fruit to donate, want to volunteer or have any questions please call one of the phone numbers in the previous paragraphs.

Florida State Fair Horticulture Display: February 10 - 21. If you would like to help man our exhibit please contact Charles Novak (813) 754-1399. Free fair admission tickets will be given to members who donate a few hours of their time to talk with the public about growing rare and tropical fruit.

From the President
Charles Novak

If you missed the January meeting then you missed a very informative program by Tammy Kovar Dorton. Tammy gave out many packets of mycorrhizal fungi and beneficial rhizosphere bacteria. She has also become a member of our club. Please use your mycorrhizal fungi and beneficial rhizosphere bacteria packets and let her know how it worked for you. During the cold weather give the mycorrhizal fungi and beneficial rhizosphere bacteria more time to work.

It's hard to believe it's Citrus Tasting time at the Florida State Fair again. This event is on Sunday, February 13. We need your help to make this event a success. If you haven't signed up to help please contact me so I can add your name to the list. We also need members to man our horticulture display - February 10 - 21. We receive many questions and comments from the public and you will enjoy your time talking with them about growing rare and tropical fruit. If you are asked questions you cannot answer you may refer them to our club web site where they can e-mail their questions to me and I will answer them.

There are 9 more gallons of the Colloidal cleaner available. If you want to reserve a gallon please contact me.

Our Board of Directors will be elected at the March meeting. Please think about being on the board.

Scheduled Speakers/Events:

February 12: Pick Citrus at George & Elaine Riegler's

February 13: Citrus Tasting at the Florida State Fair

WHAT'S HAPPENING
Jan-Feb 2005
by PAUL ZMODA

I enjoyed the interesting and informative program on mycorrhizae at our last meeting. The following day I inoculated all my newest plantings as best I could with the free samples given out by Tammy Dorton.

The latest crop of tea seedlings are getting large enough to pot up, so I've been doing that.

Now is the time to cut fresh, live trees if you wish to cultivate mushrooms. I sectioned some "hurricane victims" from back in our woods and have the logs stored under palm fronds. In a few weeks I will order mushroom spawn in dowel plug form. Holes will be drilled into the logs and the plugs will then be hammered in and sealed with wax. I am planning to grow chicken-of-the-woods and oyster mushrooms this time.

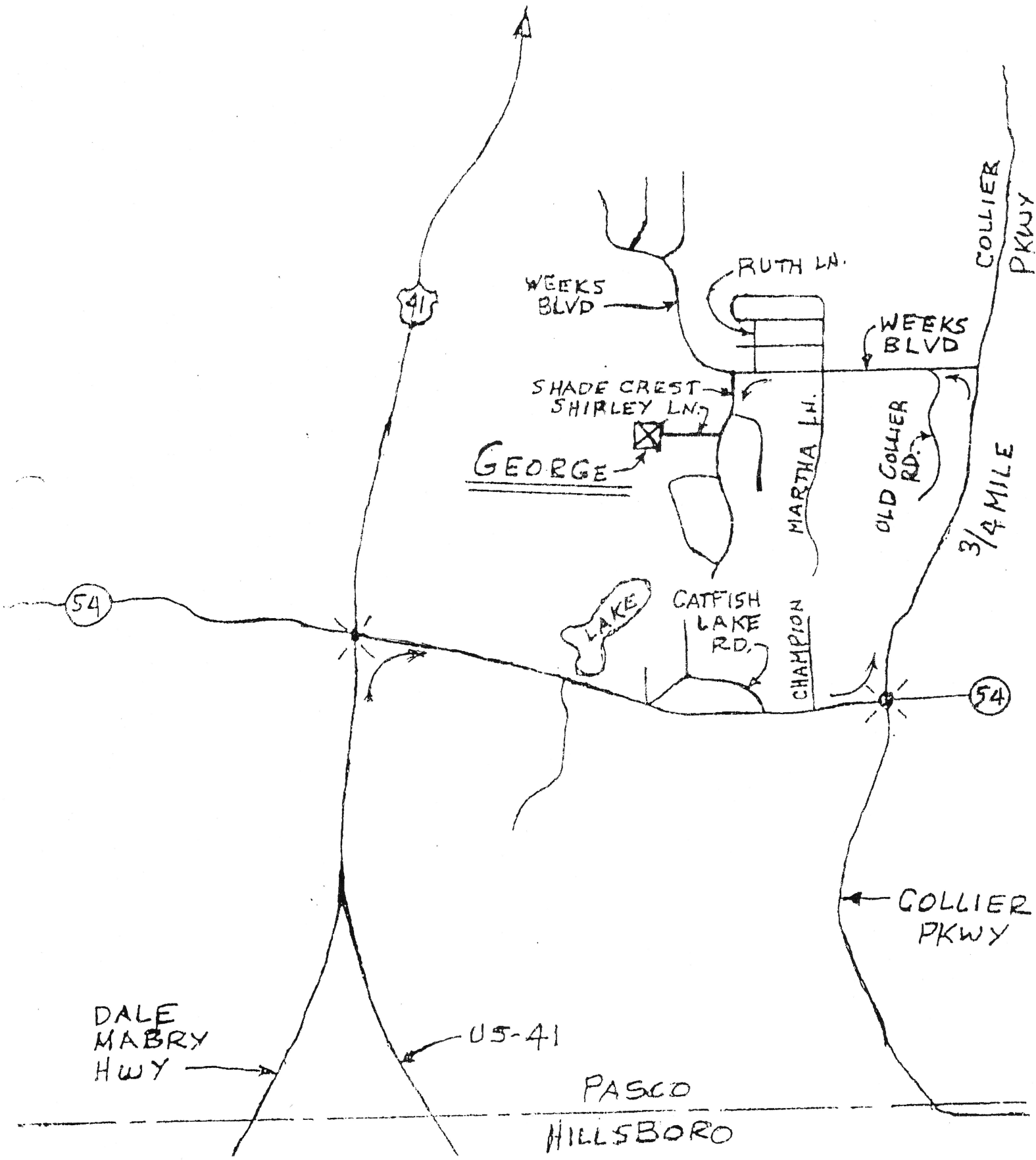
Once again, our 5 year old jak fruit tree is flowering. This is a good sign. These stubby white blooms are all on branch tips, so I am guessing that they are male flowers.

Most of our citrus trees are providing some wonderful crops now. We mix all kinds of the juices together for drinks. So delicious.

New plantings: lady palms, lettuce.

DIRECTIONS TO GEORGE RIEGLER'S
@ 22506 SHIRLEY LANE
LAND 'O LAKES FL

TO BROOKSVILLE



TASTING TABLE JANUARY 2005

F. Engelbrecht	Cassava	M. Lohn	Pineapple Angel food cake
S. Lohn	Walnut brownies	P. McGauley	Hot mama pole beans
M. Kirby	Bean salad	R. Shigemura	Orange tart, strawberry cheesecake
Walsh	Cookies	L. Smoleny	Pineapple, papaya, cranberry cobbler
J. Gibson	Banana Nut Bread	D. Wallace	Tropical fruit medley w/pecan topping
T. Scott	Fresh pineapple	Saceda-Bigelow	Purple yam 'Ube' cake
M. Branesky	Fried rice	M. Chavez	Brownies, cookies, candy
B. Parker	Bean salad	V. Dickey	Hog hall jelly w/crackers
N. McCormack	Ginger cookies	S. Quenan	Macaroni salad
V. Sinclair	Pistchios/Dates	Musgraves	Guava & strawberry pastry bites
Lee	Assorted cakes, cookies, candies, guacamole & crackers, strawberry shortcake		
Novak	Wild rice & mango salad, fresh fruit tray, Kumquat oatmeal cookies, candied kumquats, strawberry nut bread and guava banana nut bread with Hawaiian spread, juices		

New Members:	Yoshimi Tamura	Tampa	Marilyn Chjavez	Tampa
	Yuko Topping	Tampa	Yoshiko Core	Tampa

Board of Directors Election at the March meeting: Members who are interested in serving on the Board of Directors please contact Sally Lee (813) 982-9359 or Walt Yoblonski (812) 633-7754. The Board of Directors is responsible for the policies, finances and direction of this RFCI chapter. The list of candidates will be published in the March newsletter and will be presented at the March meeting. Additional nominations may be presented from the floor. The Board of Directors will be elected at the March meeting by a majority vote of the general membership present and voting. Directors serve a one-year term and will assume their respective offices immediately after the March meeting. The Board meets monthly or at such times deemed necessary.

FUNGI PROMOTE GROWTH

Beneficial fungi that are commonly intertwined with vegetable plant roots can increase the area of soil explored for nutrients by 4 to 5 times. Roots can cover a certain area and some plants don't have extensive root systems. Although these fungi can be found in all good soil, there may be little in areas where the topsoil has been removed or in sandy areas where nutrients are leached from the soil.

These fungi are able to absorb phosphorus when the soil concentrations are low enough that none is absorbed by the plant roots. Where the fungi are not present in the soil, there are ways to introduce them. Plants can be started in infected soil and then transplanted into non-infected soil. Infected plants are better able to withstand the shock of transplanting. Plant roots also regenerate faster after periods of drought, and in most cases the infected root is resistant to pathogenic fungi.

This arrangement is beneficial to both plant and fungus. The fungus produces a sugar alcohol, mannitol, that inhibits the plant enzymes from making insoluble carbohydrate. The carbohydrate stays soluble and about 10% of it moves into the fungus. The fungus also supplies the plant with phosphorus and several other nutrients.

(Continued on page 05-14)

PLANT HEALTH DEVELOPMENT

by Tammy Kovar Dorton

Tammy began by expressing her great interest in growing rare fruit. She said, "I am one of you guys. I love growing tropical fruit and have visited fruit markets in Colombia and Costa Rica." Tammy lives in Bradenton at Lakewood Ranch and she travels all over Florida and the southeast, working for a manufacturing company, Plant Health Care. She also has an affiliation with the Magic Foundation, and recently, because of people like ourselves who may not have the equipment to work with, has created her own biological tree service company.

Tammy began her presentation by projecting on to the screen a picture taken from our own website. She said we have the most beautiful pictures of rare fruit that she could find on the internet and she thanked us for the opportunity to be here. She is a biologist and Plant Health Care's market development person for all markets, which includes all the golf courses in the state of Florida, landscapers, contractors, the D.O.T., farmers, tomato growers; anyone who works with plants is free game for her.

The company, Plant Health Care, is a world leader in mycorrhizal fungi technology and beneficial bacteria, which are below ground root inhabiting microbes. She expects some of these products to be on the open market in the next couple of years so they can be purchased at Home Depot or Lowes instead of having to order from a specialty product distributor. She indicated that she really wants to address the natural approach to exotic fruit, and growing what we already grow by incorporating these natural microbes. The part of the plant that is underground that we can't see, the roots, are what drives the success of a plant. As an example, if we're growing a fruit tree, we have a nice fibrous root system that is doing the work of uptaking the water and the mineral elements from the ground and in addition, we have the structural roots. She showed a fibrous root surrounded by a blue area which indicates the zone of absorption. The

picture indicates that the fibrous roots' area zone of absorption is limited to a very small area, just the area we can see on the picture shown blue surrounding the root. So when we fertilize and water, the fertilizer and water is mostly outside the zone of absorption. Most people feel that, when they fertilize, the plant is capturing all of the nutrients in the fertilizer, while they're actually capturing a very minimal amount of water and nutrients. Anything outside the immediate area of the root is outside the availability of the plant's roots; it's just wasted. The solution is a development of nature. In the natural forests, in the desert lands, in the jungles, the plants are green and growing well. Natural ecosystems have designed mechanisms for not having humans to add fertilizer to the soil; the solution is what is called mycorrhizae, or as Tammy prefers to call them, "fungi roots". These fungi roots have evolved to form symbiotic relationships that are mutually beneficial for the roots of the plants and for the fungi. Plant pays a sugar tax to the fungi which in turn grows out into the local area to mine water and nutrient, remove it from the soil and give it to the plant roots. Tammy then showed us some pictures of what that looks like so we could understand the process. She indicated that she would be speaking about two classes of the symbiotic mycorrhizal fungi. The first one is an ectomycorrhizal, which is most commonly found on the roots of pine, oak and hickory trees. This class of fungi grows externally on the fibrous roots. We can see them if we scoop up a handful of soil. They grow generally in the top 2 to 8" of the soil where the fibrous roots of the plants grow. Fruiting bodies of this class of fungi appear in Florida anywhere from July to September in the rainy season and exist in the form of puff balls. If you've ever kicked over a puff ball and seen the spores disperse, it might be this class of fungi. So what you're doing is a good thing by disseminating the spores. They make trillions of spores and the puffball is the fruiting body. With the existence of the fungi around the roots, the plant is able to mine 700 to 1000 times more soil.

By doing this, the plant captures the nutrients and chemicals and water in the soil in a huge system. Mycelium, or roots, of the fungi in pine trees have been found as much as a mile away from the tree itself within this network of mycelium, which are the fungi roots. Ecto mycorrhizae fungi represent about 8% of all the plants in the world. The other type which occupies some 90% is the indo mycorrhizal fungi. Probably in the rare fruit growing field, the mycorrhizae that we will be interested in is the indo mycorrhizal fungi. This type of fungi grows within the cortical cells of the root. You can't see them unless you take samples of the root, have them stained and restained, and use some harsh chemicals to be able to identify the fungi under a microscope. But we're not going to do that today, Tammy said, because she has slides that show this process. This class of fungi occurs in 85 to 90% of the 300,000 species of plants in the world. Spores and mycelia are produced outside the roots. Mycelia tend to hold together the plant's integrity of the soil, provide an increased porosity and air/water movement. Without the establishment of the mycorrhizal symbiotic relationship, the plant's roots are open to citropha, nematodes and other diseases. There is no competition.

Tammy indicated that mycorrhizal fungi do not control nematodes or other fungi. What they do is keep the roots' organisms in balance. Mycorrhizal fungi adds to the competition of the nematode. Food source for nematodes is the same food source that the mycorrhizal fungi work with, so the mycorrhizae keeps the nematodes at bay through the competition. By establishing a mycorrhizal system underground, we have also established a sustainable micro base fertility system. Now we have a home for all these beneficial bacteria that work in the soil, the nitrogen fixers that convert atmospheric nitrogen to nitrates. Phosphorus that is bound up in the soil depends on the microbes to convert it to a usable form and make it soluble so the plant roots can take it in. The

The mycorrhizal network absorbs the water soluble mineral nutrients that are supplied by these living nitrogen fixing bacteria. The phosphates, solvablizing bacteria and the decomposing bacteria form a fungi partnership on the roots. But without the bacteria, the partnership is not complete, as the bacteria feed off of the excretate of the fungi.

Tammy showed some pictures of roots that were wide open to pathogens and nematodes, and a different root that was in a mycorrhizal zone. On the one hand, we have a very small surface area for them to be active in, because without the mycorrhizae there are no populations of bacteria that they need to survive, thrive and be healthy.

On the other hand, if we give them the beneficial bacteria, the plants are going to perform much better than if they did not have this partnership. So what do we get out of these mycorrhizal partnerships? We produce an extensive well branched root system, increase the feeder root absorption capacity, increase the availability of water and mineral nutrients, meet all of the plant's demand of better survivability under stress, and where a high salt situation exists, help a plant tolerate salt, a sustainable supply of nitrogen, phosphorus and all the other minerals necessary for maintaining plant nutrition and improved carbon allocation. Also there is a fungal protein produced in the excretates of the mycorrhizal fungi that acts as a fungal glue underground to bind together all the fine soil particles. Here in Florida with our fine sand, it is extremely helpful for us to have this soil aggregation in our soil around the roots. So now we have improved soil tilth, better air/water ratios, better water percolation. All plants are dependent on production & utilization of sugar, which comes from one primary source, photosynthesis. All plants require the same basic resources to promote growth & survival: water, CO₂, light and mineral nutrients. Full growth requires the nutrient glucose, which comes from the plant's energy factory, the leaves.

JANUARY PLANT EXCHANGE

PLANT	DONOR	WINNER
Surinam Cherry	Heath	Adam Zaidan / Dale Wallace
Papaya	"	?
Banana	"	?
Rangoon Creeper	"	?
Beauty Berry	"	?
Pineapple	"	Shannon Lohn
Loquat	"	Lillian Smoleny
Eugenia Confusa	"	?
Cabelluda	"	Faye Moore
Cycad Dioon Edule	Heath	Dallas Baker
Kava Kava 4	Sinclair	?
Lemon Grass	Steve Lohn	W. Rushing ?
Lemon Grass 3	"	?
Pruning Shears	Zmoda	?
Pruning Shears	"	?
Navel Oranges	Lee	?
Navel Oranges	"	?
Avocado	"	Lorraine Walsh
Avocado 3	"	?
Longan	"	?
Java Plum	"	?
Sugar Cane 2	"	?
Java Plum 2	"	?
Papaya	"	John Gibson
Cassava	Lee	?
Red Papaya	Kitchen	V. Sinclair
Red Papaya	"	?
Lemons	Teri Worsham	?
Palestinian Sweet Limes	J. Newcombe	Mary Derrick
Key Limes	"	"
Jade Plant	Bigelow	William Vega
3 Ornamental Variegated Pineapples	John Gibson	R. Harris
3 Seedling Avocados	"	?
Basket of Grapefruit	Ron Watkins	?
Pencil Cactus	Ed & Lorraine Walsh	?
Bearss Limes	Zmoda	?
Banana	Judy Cimafranca	A. Harris
Bromeliads	"	Dale Wallace
White Ginger 3	Pat McGauley	Shigemura
Pineapple	Thom Scott	Ron Watkins
Surinam Cherry	"	R. Harris
"	"	?
Loquat	"	Richardson Chase
"	"	?
Passion Fruit (fruit)	"	?
"	"	?
Flowering Banana	?	Sonia Saceda-Bigelow
Fruit Basket	Charles Novak	Dale Wallace


 Happy Valentine's Day

Fungi Promote Growth, continued:

Roots absorb some minerals more readily than they do others. Phosphate absorption is not easy and depends on the number of feeder roots and the presence of the fungi.

Soil that is already low in phosphorus will become very deficient after two or three crops with infected plants. When the phosphorus level in the soil is high, most plants fail to become infected. In many regions of Florida, the soil has adequate levels of phosphorus. With the increasing cost and potential shortages of phosphorus and the use of natural deposits by organic gardeners, these fungi will become more important.

A GUIDE TO TROPICAL FRUIT TREES & VINES (continued)

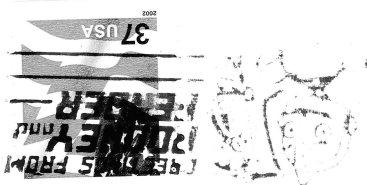
FAMILY - MALVACEAE98. *Abelmoschus manihot* - Hibiscus manihot

Shrub to 6 feet, native to Tropical Asia. Lobed leaves to 18 inches long. Flowers whitish to yellow and up to 5 inches across. Fruit is 2-1/2 inches long. Leaves are edible. Propagation is by seed or cuttings.

99. *Hibiscus sabdariffa* - Roselle

Herb or shrub to 6 feet, native to Tropical Africa. Lobed leaves are red in color. Flowers are bright red, the fruit is red and the calyxes are used to make a preserve resembling cranberry. Propagation is by seed or cuttings.

FIRST CLASS MAIL



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