

Gulf Coast Fruit Study Newsletter

Volume 19, Issue 2

Edited By: Ethan Natelson

May 10, 2005 Meeting

Planning Committee:

Carol Cannon
Gregory Carrier
Yvonne Gibbs
George McAfee
Doug McLeod
Rick Matt
Michael Morrison
Ethan Natelson
David Parish
Victor Patterson
Bob Randall

Current Meeting:

Our program will begin on **May 10, 2005** at **7:00 p.m.** at the Extension offices at the Bear Creek Facility. The guest speakers will be (1) Dr. James Kamas, Texas A&M Fruit Specialist, on Fruits for South Central Texas, and (2) Gregory Carrier, on Bees and Berries.

Contact Us!

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3033 Bear Creek Dr.
Houston, TX 77084-4233
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Mycorrhizae and Plant Propagation

Fungal organisms are ubiquitous in nature and compose a substantial amount of the biomass in soil. Certain pathogenic fungi, such as *Phytophthora cactorum* (causing collar rot) and *Phymatotrichum omnivorum* (causing cotton root rot) are the major reason an apple industry has not been able to be established in Texas, because of their harmful effects on apple rootstock systems. Yet other beneficial fungi are of major importance in stimulating healthy plant growth.

Fungi are unable to manufacture their own food by photosynthesis, as can plants and algae. They are generally aerobic and prefer a soil pH below 7. They utilize preformed organic material from other organisms as sources of energy. Because of their thick walls, they can resist desiccation. **Mycorrhizae**, refers to mutualistic associations between plant roots and fungi. These associations are classified as **endotrophic**, where the fungus actually lives within the plant root cells

and **ectotrophic**, where the fungus forms a sheath of mycelium over the root surface. Examples of the **endotrophic** type are the *Zygomycetes*, like black bread mold and genera such as *Glomus* and *Gigaspora*. These fungi produce large spores which can be harvested, dried, and then packaged for sale. The **endotrophic** fungi produce a branched structure within the plant cell that creates a large surface area for transfer of nutrients and extends out from the root for several millimeters. This arrangement particularly brings in needed phosphorus for the plant, which provides sugars that sustain the fungus.

The **Ectomycorrhizal** fungi are generally in the class *Basidiomycetes* and *Ascomycetes*, mushrooms are an example. They provide an extensive network of hyphae surrounding the tree roots, extending out into the soil mass and which provide for fluid and nutrient passage.

(continued)

Mycorrhizae and Plant Propagation (continued)

These hyphae do penetrate the root systems, but extend between the plant cells, as opposed to the *endotrophic* fungi, which penetrate the plant cells. The *ectomycorrhizal* fungi often produce chemical substances which inhibit the growth of pathogenic fungi, and, thus, protect the plant by this mechanism, as well as by improving drought tolerance and providing a conduit for nutrients.

Currently, a number of commercial sources provide dried mycorrhizae products, usually including species of *Scleroderma*, *Rhizopogon*, *Glomus intraradices*, *G. aggregatum*, *G. mosseae* and *Pisolithis tinctorius*, as well as inoculated potting soil.

Soil fumigation, for example with broad spectrum agents, such as methyl bromide, will kill not only pathogenic nematodes, but mycorrhizal fungi, as well. These fungi will then need to be re-inoculated for optimal plant growth.

WE EXPRESS OUR THANKS

There are a number of people who contribute to the success of our Gulf Coast Fruit Study Group, and we would like to acknowledge some of them in this issue of the newsletter.

Laura Luczak reports that work has begun on the final phase of the monument to Dr. Leon Atlas, located in the orchard section of the Tom Bass Park. She secured the beautiful stone that is now being placed on a concrete foundation. This project could not have been accomplished without her. We also owe thanks to the Harris County Master Gardener's Association, Urban Harvest, and many others from the Gulf Coast Fruit Study Group who contributed to the financing of this endeavor.

Additional volunteers who allow us to continue to plan our meetings include Yvonne Gibbs, who acts as a liaison between Michael Morrison, Carol Brouwer and others from the Extension Facility, with input critical to our success, and our study group planning committee, and presenters. Rich Lund is our official greeter and signs in our guests. Kristina Baldwin is our hospitality hostess and the designer of the unusual fruit mice you may notice on the coffee table.

FRUIT STUDY GROUP TOUR

We intend to re-institute our periodic tours to interesting plantings and fruit-related industries in our area. On June 10th, we will gather at the Bear Creek Extension Facility at about 7:30 a.m. to board a courtesy bus to visit Joe Swain at his winery and grape orchard and then continue on to the Ray Haak commercial apple orchard. These facilities are located near Sam Powers' home in Sante Fe, to the South, and we will stop at his place for lunch and to see his jujubes and greenhouse projects. **Please bring your own brown bag lunch, as lunch will not be provided.** We will provide soft drinks. The bus only seats 38-39 people, and so we would like you to fill out the form below, as a reservation, if you wish to ride with us. The bus is free, but the County requires this information for you to board. The form may be dropped off at the next meeting or mailed to Yvonne Gibbs, at the Extension Service Offices.

NAME: _____

ADDRESS: _____

PHONE: _____

NAME AND PHONE OF EMERGENCY CONTACT PERSON:

HARRIS COUNTY
MASTER GARDENER ASSOCIATION
3033 BEAR CREEK DR.
HOUSTON, TX 77084-4233

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Upcoming Meeting Details

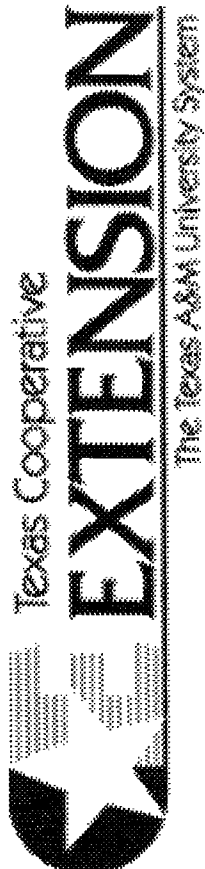
Date: May 10, 2005

Time: 7:00 p.m.

Guest Speakers:

**(1) Dr. James Kamas, Texas A&M
Fruit Specialist, on Fruits for
South Central Texas**

**(2) Gregory Carrier, on Bees and
Berries**



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