TEXAS A&M UNIVERSITY-KINGSVILLE

CITRUS CENTER

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CHANGES TO THE BUDWOOD PROGRAM

Since the inception of the Texas Certified Budwood Program, participation has been voluntary, although it is covered by state law. Many nurseries serving both the commercial and homeowner markets have been participating, and we are providing over 120,000 virus-free buds annually. Earlier this year, the Budwood Advisory Committee appointed by the Texas Commissioner of Agriculture, recommended that it was now time for the program to become mandatory for the major varieties. The Texas Department of Agriculture published the proposed changes in the State Register for the required comment period, and consequently the new regulation will come into force on September 1, 2006. Any trees budded before this date will, however, be exempt.

After September 1, propagation of the following varieties will only be permitted using certified virus-free budwood from the Citrus Center:

(1) Rio Red grapefruit
(2) Standard & Olinda Valencias
(3) N33 navel orange
(4) Marrs & Pineapple oranges
(5) Meyer lemon
(6) Mexican lime (both thorned and thornless)

Other varieties will be added to the list in the future, and in due course it will apply to all varieties.

Another change being introduced from the same date is that all orders will have a handling fee of $1/budstick added on to the TDA charge of 10c/bud. This already applies to people ordering small quantities of budwood, and we are extending the charge to everyone. Nurseries will be able to recover the extra cost by adding a small amount to the price of the trees they produce. The program has been funded since its inception by the Texas Citrus Producers Board, and we are now taking steps to make the program self-sufficient.

John da Graca and John Watson

HOMOPTEROUS PESTS ON THE INCREASE

This summer there have been unusually heavy infestations of several Homopteran "bug" species showing up in Valley citrus orchards. Whiteflies have been prevalent, especially the **woolly whitefly**, *Aleurothrixus fluccosus*, with leaf under surfaces covered by woolly white wax filaments produced by feeding and developing immatures. The **cloudy-winged whitefly**, *Dialeurodes citrifolii*, whose name comes from the distinctive dark spot on the distal end of the adult's white front wings, have been common on new citrus flushes. Moreover, with the defoliation of cotton underway clouds of adult **silverleaf whitefly**, *Bemisia argentifolii,* are moving into nearby crops including citrus. New flush growth is again targeted, with leaves frequently showing heavy yellow chlorotic flecking from feeding of silverleaf whitefly. Generally, only 1-2 generations (each 3-4 weeks long) of silverleaf whitefly occur per season on citrus. Although named the **citrus blackfly**, *Aleurocanthus woglumi*, is also another whitefly species (family Aleyrodidae). Blackfly infestations are again on the rise in some mid and western Valley citrus orchards.

The **citrus mealybug**, *Planococcus citri*, a traditional long-standing Texas citrus pest is again becoming increasingly common in some orchards. The adult female and immature stages are easily recognized by their flattened striated body with short irregular lateral filaments and white waxy covering. Eggs are deposited in the wax and the white cottony

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covered egg masses can become so heavy that fruit at times looks like 'snowballs' hanging in the tree. The **barnacle scale**, *Ceroplastes cirripediformis*, generally a minor pest has also shown up in fairly high populations in several citrus orchards. The name comes from the barnacle-like shape of the adult female, with 6 dusty white angular plates on the sides and 1 on the top—each with a distinct spot. Eggs deposited beneath the female, hatch into brown crawlers that move onto leaves and twigs. They settle and feed, becoming white and 'stellate' shaped as wax accumulates on the body. The later stage nymphs are a mottled brown color with distinct white tuft like projections. They assume the angular shape and dusty white appearance upon reaching the adult stage. Barnacle scale seldom infest fruit.

Control strategy (chemical and biological) updates for the afore described pests will be forthcoming in future newsletters.

Barnacle scale adult & white 'stellate' nymphs

Grapefruit infested with citrus mealybugs

J. V. French and M. Setamou

CONGRATULATIONS TO TINA THOMAS

Tina Thomas, student at the Citrus Center graduated with a MS degree from the Department of Agronomy and Resource Sciences of TAMUK in August, 2006. A native of India and born in Nigeria, she joined TAMUK in August 2004. With a chemistry background, she worked under the direction of the faculty at the Citrus Center in Weslaco and Apurba Bhattacharya of the Department of Chemistry in Kingsville and produced some exciting new information.

In her thesis, Tina worked on a masterpiece report from Brazil 26 years ago describing induced resistance to *Phytophthora* infection in sweet orange plants infected with *Citrus exocortis viroid*. This phenomenon was later confirmed in other citrus cultivars elsewhere. In her work, Tina evaluated the number of *Phytophthora* sporangia in the bark, leaves, and roots of 'Rio Red' grapefruit leaves used as bait. The baits were from grapefruit trees infected with one or more citrus viroids. Control baits used had no viroid infection. Her results showed that many viroids significantly reduced *Phytophthora* infection, confirming earlier reports. The degree of resistance to *Phytophthora* varied among the viroid types; however, a well-studied viroid isolate, E-9 and one other significantly reduced the number of sporangia in leaves and bark compared to others. The number of *Phytophthora* sporangia on bait tissue varied with treatments on the leaves, bark, and roots. Among all the viroids compared, six showed a potential to significantly reduce the infection of *Phytophthora*, while the other two had no effect. More work is needed to develop and establish a biological control method for *Phytophthora* management using citrus viroids that will not cause themselves a major disease.

Tina has now joined the Texas Tech University (Department of Chemistry and Biochemistry) for her Ph.D program. We wish her the best in her future studies.

Mani Skaria, Mamoudou Setamou, and John daGraca

LOCAL STUDENTS FINDING THEIR WAYS TO SCIENCE

One of the biggest challenges facing the United States today as the world leader in the sciences is the shortage of technically skilled workers, which is facilitating other countries to challenge this economic strength. This shortage is being filled by guest foreigner workers, which is a short-term solution but does not solve the problem. A new pool of scientists must be recruited from domestic sources to fill this labor gap. Hispanic Americans and other minority groups represent an untapped reservoir of talent that could be used to fill this shortage in science, if the proper funds are applied to train these promising domestic graduate students. Texas A&M Kingsville Citrus Center through Dr. Louzada's lab has been, for the last six years, funded by the federal government to attract local undergraduate students to science careers. The program has been very successful and more than 40 undergraduate students so far benefited from the program. More than 20 students were channeled to graduate studies including four pursuing Ph.D. degree. More than 95% of the students are Hispanics and are first in the family to go to college. This clearly proves that if opportunity is given to local students they will grab it and will be successful. This kind of program, if broadly applied in other universities, could be the solution for the shortage of scientist that we have nationally. For this fall of 2006 we have four students joining the graduate studies at Texas A&M- Kingsville Citrus Center biotechnology lab, channeled through this program.

Eliezer Louzada

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