TEXAS A&M UNIVERSITY-KINGSVILLE

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WESLACO, TEXAS 78596

February 2007

NEWSLETTER

Vol.25 No.1

RECENT AWARD WINNERS

Three faculty at the Weslaco Center (TAES) who spend part of their time engaged in citrus research, received Excellence Awards from the Vice-Chancellor of Agriculture and Director of TAES, Dr Elsa Murano, at the annual Agriculture Program Conference in College Station this past January. **Erik Mirkov** received the Research Award (off campus) for his cutting-edge work on both sugarcane and citrus. For the latter, he has developed transgenic citrus plants which appear to have significant resistance to several pests and pathogens, and may play a crucial role in the future survival of citrus in Texas. The other two awardees, **Bob Wiedenfeld** and **Juan Enciso**, are members of the Rio Grande Basin Initiative Research Team which won the Team Research Award for their work on developing more efficient use of water. In addition, this team has also won the USDA-CREES National Water Program 2007 Award as the Outstanding Integrated Activities for Water Resources. Bob and Juan have done part of this research on citrus in the center's orchards.

Another recent awardee is Ray Prewett, President of Texas Citrus Mutual, who received the Arthur T. Potts Award for his service to the horticultural industry of Texas at the annual meeting of the Rio Grande Valley Horticultural Society held at the University of Texas-Pan American in January. Ray has been an invaluable supporter of the Center over the years, working tirelessly in Washington DC, Austin, the Valley and elsewhere to promote the industry, secure research dollars and protect Texas from invasive pests and diseases. This award is well deserved.

Congratulations go to all.

SHOULD GRAFT UNIONS BE ABOVE OR BELOW THE SOIL LINE? TIME TO RE-EVALUATE THIS WISE OLD PRACTICE

Graft unions should be well above the soil line. This is a very wise recommendation, applied for generations to fruit trees from almonds to peaches. This practice is a strategy to control fungus, *Phytophthora* damage. The rootstock portion of the tree is generally more tolerant to soil-borne fungi and plant parasitic nematodes, compared to the scion. *Phytophthora* is very destructive to plants and it can cause very severe economic damage, if untreated. In some situations, for example, peach growers in the northwest prefer to keep the budunion several inches above the soil surface to prevent scion rooting and the subsequent production of suckers from it. I have experienced one major tree-killing freeze in my life time – it was 1989, the Rio Grande Valley of Texas, where temperatures below freezing for hours destroyed approximately 75,000 acres of citrus. It was a memorable experience for a young pathologist. In 2007, an intense freeze in California killed many trees, prompting me to ask a question, which one is the worst enemy of the citrus industry, *Phytophthora* or tree-killing freeze? Of course, I do not ignore the severity of *Phytophthora* in some soil conditions when I pop this question.

In some northern states, for example, budded roses are planted at or even below the soil line to provide some winter protection to a small portion of the scion wood. Some people in Texas keep the budunion of avocado trees below the soil surface to avoid a total destruction of the scion wood in a tree-killing freeze. Today, we have very effective systemic fungicides that can be used for *Phytophthora* control. These chemicals were introduced only in the 1980s. I do not have any data to support a hypothesis; however, I am curious. Is *Phytophthora* a bigger problem compared to tree-killing freezes? Maybe it depends on more than one factor. I believe, it is worth a well-planned experiment.

Mani Skaria

CITRUS BLACKFLY UPDATE

The Citrus Blackfly (CBF) is again on the increase in some mid and western Valley orchards. Don Grossman of Grossman Ag Service took us to several orchards in which he had found infestations of CBF. CBF infested trees were readily apparent by foliage and fruit blackened with sooty mold fungus. Examination of leaf under surfaces generally revealed CBF nymphs and pupae, but few if any adults or new egg spirals. Honeydew secreted by actively feeding CBF provides an excellent growth media for sootymold Don was concerned that CBF numbers would build and spread rapidly to non infested orchard sites with the oncoming warmer spring weather. Also, if preventative action was needed viz. chemical treatment—particularly if the beneficial wasp parasites *(Encarsia opulenta* and *Amitus hesperidum)* that attack CBF were not found. Their life cycle is synchronous with that of their host; developing from eggs laid inside immature CBF and emerging as winged CBF adult parasites from the pupae stage of CBF.

Our enthusiasm was quickly kindled when in one of the CBF infested orchards surveyed we observed several active yellow *E. opulenta* adult parasites on leaves colonized with blackfly. Moreover, in other orchards examination of CBF colonies by hand lens revealed multiple pupae with parasite emergence holes. In all cases the posterior end of each pupae showed only a single emergence hole indicative of parasitism by *E. opulenta. A. hesperidum* did not appear to be present since more than one parasite develops in a single host and emergence holes are large and irregular on the side of each pupae.

To better determine CBF infestation levels and the percent of parasitism, leaf samples were gathered from each surveyed orchard and taken to the laboratory for microscopic examination. A 3 cm disk was cut from each of 10 leaves per sample site and all CBF life stages were counted and the number of pupae with parasite emergence holes recorded. Also, a limited number of pupae were dissected on each disk to determine if they contained developing parasites. Data recorded from three of the orchard survey sites are shown in Figure 1. CBF populations and percent parasitism (27%) were both highest in an organic grapefruit orchard north of Mission, TX (Site 1). Parasitism levels will undoubtedly increase since this is the aforementioned orchard in which we observed active *E. opulenta* adults. It is definitely a source for collection of parasites. A relatively high percent parasitism (24%) rate was also determined for CBF collected from infested grapefruit and orange trees in an orchard south of Pharr (Site 2). This orchard would appear to be a second potential source for parasites. Finally, CBF collected from an organic lemon orchard also north of Mission showed a very low percent (2.5%) parasitism rate (Site 3). Monitoring of these and other CBF orchard infestations will be continued and most encouraging are the levels of parasitism by *E.opulenta* at some sites. Parasite collection and redistribution to other CBF infested orchards is planned and chemical control treatments are not recommended at this time. We want to thank Don Grossman for touring us through several blackfly infested orchards.

J. Victor French, Mamoudou Setamou and Robert Saldana

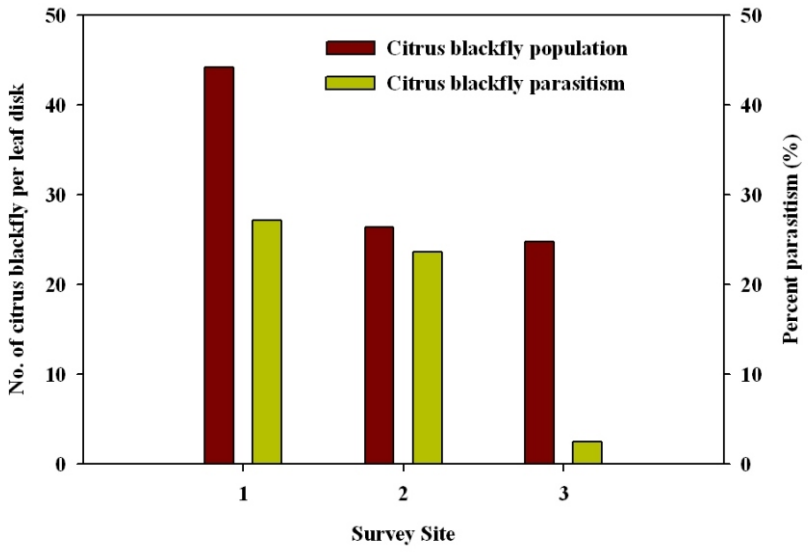

Figure 1: Citrus blackfly densities and parasitism levels in three citrus orchards sampled in the Lower Rio Grande Valley, February 2007.

ENABLE 2F ASSIGNED SECTION 3 LABELING FOR ALL CITRUS *

Enable 2F, a fungicide produced by Dow AgroSciences was granted a new federal label in January. Previously, Enable was registered under Section 18 as an emergency exemption and its use to control greasy spot was limited to grapefruit. The Section 18 labeling had to be renewed every year and excluded the fungicide from use on oranges. The new Section 3 EPA registration allows crop management to use Enable on a broad range of citrus including but not limited to grapefruit, lemon, lime, orange, and tangerine as a disease controlling agent against greasy spot, scab and sooty mold. The Enable label can be viewed by visiting the Dow AgroSciences website at http://www.cdms.net/manuf/1prod.asp?pd=6027&lc=0 .

* Reproduced from Citrus & Vegetable e-weekly, Feb. 16, 2007

Subscriptions to the bimonthly Newsletter are $5 a year or $8 for two years. International rate is $7 a year. Make checks payable to Texas A&M University-Kingsville. Address comments or inquiries to Newsletter Editor, Texas A&M University- Kingsville Citrus Center, 312 N. International Blvd, Weslaco, Texas 78596 or, in the case of signed articles, directly to the staff member named. Articles appearing in the Newsletter may be reproduced, in whole or in part, without special permission. Newspapers,periodicals and other publications are encouraged to reprint articles which would be of interest to their readers. Credit is requested if information is reprinted.

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