

# CITRUS CENTER

(956) 968-2132

WESLACO, TEXAS 78596

June 2004

## NEWSLETTER

Vol.22 No.3

### CENTER WELCOMES NEW COMPUTER SPECIALIST

During May the Center welcomed Adam Villarreal who assumed the position of Senior Program Analyst. This is the position previously held by the late Greg Panzer. Prior to joining us, Adam worked for the Raymondville School District, and before that the Progreso School District. With over 10 years experience in all aspects of IT, Adam was a strong candidate amongst several very good applicants.

He is familiar with the Center. For several years the Progreso School District and the Center shared a T1 line, and he communicated frequently with Manny Gautreaux, the computer expert at the Experiment Station. He also has had direct contacts with the Citrus Center, since he is the son of Jim Villarreal, recently retired entomology technician. Adam knew Greg Panzer well, and is very familiar with the center's computer systems.

Hopefully, Adam will enjoy working with us and will stay for many years.

**John da Graca**



**Adam Villarreal**

### NEW CITRUS PEST CONTROL GUIDE

The new 2004/2005 Guide listing the registered chemicals recommended for citrus pest and disease control is now available to growers. New on the list is Admire 2F (Imidacloprid), a systemic pesticide product of Bayer CropScience, applied as a tree trunk or soil drench treatment gives effective control of scale insects, citrus leafminer and blackfly. Provado 1.6F, another Imidacloprid formulation, applied as a foliar spray also controls the aforementioned pests. Carzol SP (Formetanate hydrochloride), a product of Gowan Co., is listed for the first time to control rust mites, and is also very effective against thrips on citrus. Esteem (Pyriproxyfen) Ant Bait, a Valent U.S.A. Corp. product, is now available for fire ant control in citrus orchards. Micromite 25WS (Diflubenzuron), Crompton Uniroyal Co., labeled for rust mite and citrus leafminer control has recently been replaced by a new formulation—Micromite 80 WGS (Water Dispersible Granules). Also, Supracide 25WP (Methidathion Wettable Powder) product of Gowan Co. was replaced by a liquid formulation—Supracide 2E for controlling armored and soft scales, citrus leafminer and blackfly.

For citrus disease control 3 newly labeled fungicides have been added to the Guide. These include: Abound Flowable (Azoxystrobin), product of Syngenta Co.; Gem (Trifloxystrobin) a product of Bayer CropScience; and Headline (Pyraclostrobin) product of BASF Co. All are effective for control of greasy spot and melanose fungi on citrus. Greasy spot has been especially severe on Valley citrus the last few seasons.

While the listing of several additional chemicals has expanded the new Guide considerably, it can still be folded and made pocket size for convenience to the grower. The 2004/2005 Citrus Pest Control Guide is printed and available at the Texas A & M University-Kingsville Citrus Center.

**J. Victor French and Mani Skaria**

## COPPER FUNGICIDES

Copper sulfate and lime were sprayed on grapes along roadsides in France in the 19<sup>th</sup> century to prevent pilfering. However, the effect of this spray on controlling vine disease was first reported by Millardet. Thus, copper became the first fungicide used to control a crop disease, beginning with the Bordeaux mixture (named after Bordeaux city, southwest France) in 1882 to control downy mildew (*Plasmopara viticola*) of grapes. The original copper used as a fungicide was copper sulfate (also known as blue vitriol or bluestone). This material combined with lime and water (10:10:100), the combination was known as Bordeaux mixture. The success of Bordeaux mixture as a fungicide resulted in the development of several relatively insoluble or fixed copper compounds. Fixed copper formulations are only slightly soluble and therefore, less injurious to plant tissue compared to Bordeaux mixture. They are insoluble copper salts such as chlorides, sulphates, phosphates, silicates, cuprous oxide. Two other mixtures of copper are known—Burgundy mixture (lime replaced by soluble washing soda) and Chestnut mixture (copper sulphate and ammonium carbonate), to protect seedlings from damping off.

Copper ions are released into solution when the compound is mixed with water. Copper ions are toxic to fungi, bacteria, and plant tissue because they destroy proteins. Therefore, application of copper fungicides also carries the risk of injuring foliage and fruit. For example, copper spray applied during cool, wet weather causes burning of leaves and fruit russetting on apples. Copper sprays in summer months may darken citrus fruit already blemished by wind scar and fungal infections. Factors influencing plant injury include the concentration of actual copper in the spray and weather conditions. Many copper compounds are commercially available as fungicides and bactericides (it also has algicide and molluscicide activity) developed by numerous manufacturers. It is widely used by both conventional and non-conventional growers. The U.S. National Organic Standards Board allows fixed copper to be used for plant disease control in organic crop production.

Copper fungicides have a contact mode of action, which means that the fungicidal activity occurs only on the surface where the copper compound is present. They are also **protectants** and can be applied to healthy plants to prevent fungal spores from germinating or penetrating host tissue. However, the chemical must be applied before the fungal spore has a chance to initiate an infection. All new plant tissue that develops after copper application is unprotected. Copper is not effective once the fungus is within plant tissues. Repeated sprays may cause resistance to copper in the pathogen you are trying to control and also localized soil accumulation and toxicity can result. Plant injury from solubilized copper may also result if it is tank

mixed with Aliette (a fungicide for *Phytophthora*; control), therefore, copper should not be tank mixed with Aliette. If Aliette should be applied before or after copper applications, remember to raise the pH with an alkaline buffer like Potassium carbonate or Diammonium phosphate.

A wide range of fungal and bacterial diseases can be controlled by copper. The diseases include—powdery mildew, downy mildew, fruit rot, gray mold, rust, anthracnose, blackspot, leafspot, black rot, and blight. Copper can be used on ornamentals, fruits and berries, trees, vegetables, shrubs, and greenhouse/indoor plants.

Mani Skaria

### HIGH SCHOOL STUDENTS RECEIVE SCIENTIFIC RESEARCH TRAINING

Seven students from the South Palm Gardens High School, Weslaco spent three days at the Citrus Center as part of a "Scientific Research & Design Course." This exercise was part of a course offered by Mr. Tim Sears, a science teacher. They spent the first day listening to a series of research presentations given by graduate students at the Citrus Center and TAMU-Kingsville. This was followed by two days of researching the citrus nematode in the pathology laboratory. They developed a hypothesis, did a literature search, visited orchards, conducted hands-on work and experimental analysis, data collection and interpretation. In addition to Dr. Skaria's mentoring, other faculty members of the Citrus Center also explained the research being conducted in their laboratories. The students presented their work to the class and others including—the Weslaco ISD administrators, teachers, and myself. Mr. Robert McGee of TAES, Weslaco made the initial arrangement for the program.

Mani Skaria



Trainees at the Citrus Center

## LONG SERVICE AWARDS

Several employees were recently recognized by the university for long service. Those recognized were Adrian Duran (30 years), Jose Medrano (30 years), Marilyn Ambros (20 years), Jose Alanis (20 years), Elias Hernandez (15 years) and Leticia Loy (15 years). A luncheon was held for all awardees in Kingsville at which certificates and pins were handed out to those who were able to attend. In addition, recent retirees were also recognized; from the Citrus Center there were two, Adrian Duran and Jim Villarreal.

At the same function, the award for Citrus Center Employee of the Year went to Greg Panzer; his wife Libby was present to receive it.

Our congratulations and appreciation for excellent service go to all award recipients.

**Jose Amador & John da Graca**



Libby Panzer receiving the Employee of the Year plaque from President Rumaldo Juarez

## TWO STUDENTS GRADUATING FROM LOUZADA'S PROGRAM

Dr. Eliezer Louzada has been heavily involved in undergraduate and graduate education since his arrival at the Citrus Center almost seven years ago. His program in citrus breeding and molecular biology has been attracting students from different parts of the world. In the year 2003 two students graduated with their Master's Degree and were immediately hired by Baylor College of Medicine. In May 2004, two more students graduated—Mrs. Viola Gade and Mr. Pedro Trejo. Viola worked on molecular characterization of partial hybrids produced by microprotoplast mediated chromosome transfer. Pedro tagged several genes in *Poncirus trifoliata*. Viola is looking for a job in the local market, and Pedro is going into the medical field. Pedro is the first student to graduate from Dr. Louzada's Research Internship Program, a USDA funded program, to attract students from the local community to science careers.

We congratulate Viola and Pedro for their outstanding accomplishments.

**Eliezer Louzada**



Viola Gade

Pedro Trejo.

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.

Mention of a trademark, proprietary product, or vendor does not constitute a guarantee or warranty of the product by the Texas A&M University-Kingsville Citrus Center and does not imply its recommendation to the exclusion of the other products that may also be suitable.

Texas A&M University-Kingsville  
Citrus Center  
312 N. International Blvd  
Weslaco, TX 78596