

# Citrus Center

Weslaco, Texas

Volume 29 No. 4

NEWSLETTER

December, 2011

## Seasons Greetings

The Citrus Center family would like to take the time to wish you and yours a wonderful holiday season and a joyous new year. May it be filled with friends, family and good weather!



## Recent Retirements

*John da Graça*

In order to cut its budget because of the state's financial situation, Texas A & M University-Kingsville offered a voluntary separation program to faculty and staff who qualified for retirement. Four long-serving staff members at the Citrus Center accepted this offer and retired on August 31.



**Pictured L-R: Cuco Rodriguez, Mike De Anda, Arturo Torres, Cira Cortez, Elias Hernandez, Marilynn Ambos, Daniel Davila**

Our new retirees are Cira Cortez (Nursery Worker), Mike De Anda (Auto Mechanic), Arturo Torres (Farm Worker) and Daniel Davila (Entomology Research Specialist). Together, they gave a combined 105 years of service to the Center. In addition to their time, their expertise and knowledge in their respective areas were essential to the success of the Center. We thank them sincerely for their long and excellent service, and wish them well in whatever they plan for their futures.

To recognize their contributions, a luncheon was held at the Center at the end of October, at which they were presented a gift. In addition, we presented retirement gifts to three other colleagues who retired in the past 12 months – Cuco Rodriguez, Marilynn Ambos and Elias Hernandez. Several other retirees joined us to wish them well.

## FEATURES

-  Greetings/Retirees...pg.1
-  New Soil Scientist...pg.2
-  Winning Posters...pg.2
-  Sétamou wins award...pg.3
-  Dormant Spraying...pg.3
-  Food Safety...pg.4
-  Miticides in the Tank?...pg.6



## Citrus Center Welcomes David Ruppert, new Soil Scientist

*John da Graça and Shad Nelson*



Mr David Ruppert joined the Department of Agriculture, Agribusiness and Environmental Science at the beginning of the Fall semester with a 25% research appointment at the Citrus Center. He has a 75% teaching appointment in Kingsville, and is teaching several graduate and undergraduate courses in soil science.

David came to South Texas from Washington DC. He began his professional career as a physicist, and worked as high school physics and chemistry teacher. When he taught an environmental science class, he was impressed with the dependence of living things on a functioning environment, including soil. This excited him, and he returned to university and embarked on a PhD in pedology and nutrient management at the University of Maryland, studying the retention and release in ditch soils. He is expecting to graduate soon.

David attended a meeting of the Citrus Center advisory committee in September, and had the opportunity to outline his research interests. We welcome David to the Center, and look forward to developing research projects which will benefit the Texas citrus industry.

## Citrus Center Student Wins Poster Awards at the 2011 Texas Irrigation Expo

*Juan Carlos Melgar and Shad Nelson*

Francisco Melgoza, graduate student at Citrus Center, won the first place prize at the Student Research Poster Contest (category graduate students) at the 2011 Texas Irrigation which took place at the McAllen Convention Center on December 8-10. Francisco received a \$500 award for his poster "Flooding can cause changes in cold tolerance in grapefruit trees". Poster award winners were recognized by Senator Eddie Lucio Jr. in a reception held at the McAllen Convention Center on December 8<sup>th</sup>. Senator Lucio remarked on the importance of water conservation for Texas and encouraged undergraduate and graduate students in their research. Control of high salinity levels in the Rio Grande, flood protection and control at the Lower Rio Grande Valley, and the increased use of underground pipes instead of open canals for water movement in the Valley were some of the other topics of interest brought up by the speakers during the reception. In his work, Francisco reports how grapefruit trees show decreases in photosynthesis and tree water relations only after one week under flooding conditions, although at the same time, these trees subjected to flooding conditions can show increases in their cold tolerance, probably due to the synthesis of abscisic acid in their roots.

The award for second place went to Miguel Gomez and Catherine Simpson for their poster 'Saline Irrigation Water Impacts on Grafted and Non-grafted Citrus Trees'. Miguel is an undergraduate Plant & Soil Science student in Kingsville, and Catherine is a cooperative PhD student working under the direction of Dr. Shad Nelson.



## Dr. Sétamou Wins Alumni Association Award

*John da Graça, Mani Skaria, Eliezer Louzada, Juan Carlos Melgar and Shad Nelson*

At the annual luncheon of the Javelina Alumni Association in Kingsville on October 22, Dr Mamoudou Sétamou was awarded The 2011 Distinguished Researcher Award. Since he joined the Citrus Center in 2006, he has secured \$3.2 million in grants, refereed 30 publications and chaired 22 graduate committees; one can easily see why the Association chose him for this year's award. All faculty from the Center accompanied Dr Sétamou to Kingsville to witness him receiving the award, and to congratulate him.

Well done, Mamoudou!



are detrimental for the development of many insect and mite pests. These cool weather conditions are in contrast beneficial for the residual activity of pesticides—many pesticides degrade rapidly with high temperature (thermo-degradable) and/or with high light intensity (photodegradable). Abamectin (the active ingredient in Agrimek, Abba, Zoro, Epimek, Agmectin) is one such miticide whose persistence is reduced by high light intensity, thus explaining the lower residual control obtained with this miticide in summer months in south Texas when light intensity is at its maximum.

Spraying during the winter period leads to a dramatic reduction of pest populations as their initial densities are low and the persistence of pesticides is higher due to favorable environmental conditions (lower temperature and light intensity) that do not lead to their rapid degradation. Many pests will be brought to near zero levels with winter sprays and as the weather warms up with the onset of spring in mid to late February and pests become active again, populations increase will be significantly lower than without winter sprays. This winter dormant spray strategy allows the grower to better implement integrated pest management strategies during the growing season by being ahead of the game and not constantly playing catch-up with pests. *With winter sprays, citrus growers are winners!*

## Winter Dormant Spray: The Key for Successful Pest Management in Citrus

*M. Sétamou*

Prevention is the first line of defense in controlling pests and diseases in citrus orchards. Most pests are overwintering and not very active during the winter season. For citrus that are evergreen trees, key pests overwinter within the groves. Effective season long management of these pests requires controlling their populations during the dormant season to reduce overwintering populations.

### *Growers are winners with winter sprays!*

In our commercial citrus production zone in south Texas, citrus trees are dormant during the cool season from November through early February. During this winter season pest populations are at their lowest levels in groves, and many pests do not even reproduce and are overwintering only. The cool temperatures coupled with the reduced daylight intensity

### *Dormant sprays should be part of overall grove care practices*

Dormant spray of citrus orchards is probably as important to the overall well-being and productivity of citrus trees as pruning, hedging, and any other grove care practice. Many pests are resident in citrus groves, and the winter season is the only period of the year when their populations are at their lowest and individuals at the weakest stage. Targeting these pests during winter generally provides the best control that can ever be achieved in a grove, thus leaving marginal numbers that will initiate new generations in spring. Successful control of citrus rust mite and Asian citrus psyllids among others has been demonstrated with the winter spray approach in south Texas. We encourage growers to embrace this winter spray program as part of their overall grove care strategy.



## Food Safety Modernization Act (FSMA) and the FDA Plan to Stop Catastrophic Harm

*Mani Skaria*

I just finished teaching a graduate class on Food Safety and Plant BioSecurity at the TAMUK Citrus Center. Food safety is a hot topic, especially with the FSMA and the upcoming FDA plans to stop catastrophic harm to people and business.

**Food Safety Modernization Act (FSMA):** The fact that about 48 million people get sick from food-borne illness is a significant number. Moreover, 128,000 are hospitalized every year and 3000 die. Food consumption has changed from a locally produced and locally consumed situation to a globally produced and globally consumed mode. About 15% of the U.S food is imported; more food items are displayed on supermarket shelves. Unfortunately, new hazards are seen nowadays in foods, compared to previous years. These trends made President Obama to sign the historic Food Safety Modernization Act in January 4, 2011. FSMA is aimed at bringing in sweeping changes and improvements towards making the U.S food supply safe.

**Agencies and Stakeholders:** The government is not alone, the program is supported with standards, rules and regulations self-imposed by the stakeholders and mandated by the regulatory agencies and buyers and consumer groups. The food safety idea is not new – what is new is the process of applying a comprehensive, technology-based procedures combined with a commonsense driven approach, but under wide scrutiny. This can delay food distribution, increase cost, but ensure safety and elevate quality. An enhanced partnership among the regulatory agencies, stakeholders, scientists, and consumers is an important theme of the new legislation. Apart from ensuring food safety for the consumers, the new legislation is expected to prevent catastrophic economic loss to the producers. The Food and Drug Administration (FDA), the U.S. Department of Agriculture (USDA) and various consumer and trade groups bring in (or demand) the need for both internal and third party audits. Because a

breakdown at any point on the farm-to-table spectrum can cause catastrophic harm to the health of consumers, safety measures at each and every step is critical. A demonstrated documentation, accountability, based on good agricultural production and/or manufacturing practices will help food producers, handlers, and processors from facing serious disruption and economic loss.

**The Texas Citrus Industry:** Citrus has a unique position in the spectrum of reported cases of food-borne illnesses. Compared to other products, citrus is a safe fruit. However, the producers are not expected to be complacent with such assurance. Past performance is no guarantee of future food safety. To my knowledge, all Texas citrus fruit handlers are adopting a system for ensuring freedom from physical, biological and chemical contaminants on citrus fruit. Food safety training, management policies, specified job responsibilities, written protocols, internal audits, correction of problems, internal audits, third party audits – all are being implemented. A good team work will help transport fresh, tasty citrus, nationwide.




---

## Reduced Efficacy of Miticides in Tank Mixes: Copper Fungicides the Culprit?

*M. Sétamou*

Costs of chemical spray application in citrus pest management are continuously increasing. The changing landscape of citrus groves with invasive pests constantly making their way into citrus groves coupled with the resistance development of indigenous pests to commonly used pesticides makes citrus pest control one of the most expensive grove care operations in Texas. It is not uncommon that growers spend over 50% of total grove care costs in pesticides and their application. Thus for better efficiency, pesticides are often combined and applied in tank mixes. Tank-mixing pesticides and sometimes fertilizers, is a convenient and



(cont'd from Page 4)

cost effective way to apply two or more chemicals at once. When done appropriately, tank-mixing can reduce labor and equipment costs, and save time and energy. However, chemicals can potentially react with each other and these interactions can change the efficacy of pesticides either positively or negatively. Positive interactions can be in forms of enhancement, additive effects or synergism in the efficacy of pesticide which lead to better pest control. In contrast, negative effects such as antagonism, incompatibility, pesticide resistance may result from inappropriate tank mixes.

In Texas many growers make tank mix pesticides for pest and disease management in citrus. In recent months, reduced efficacy of some miticides for citrus rust mite control has been reported. At the same time, there is an increase in fungicide use including copper for the control of sweet orange scab and other citrus diseases. Copper is known to interact with many chemicals. To develop appropriate guidelines in tank mixing miticides, we conducted some tests evaluating the performance of many miticides applied either alone or in combination with Kocide. Reduced effectiveness of Agrimek, Vendex and Envidor occurred when combined with copper. The copper fungicide sprayed alone slight increased citrus rust mite populations relative to the unsprayed control. These results suggest that tank mixing miticide with copper can reduce the control efficacy of these miticides and growers should carefully select the miticide to use whenever they want to add copper in spray tank. In addition, due to the fact that copper can potentially increase citrus rust mite populations, a compatible miticide needs to be added to the tank during copper applications to avoid flaring up citrus rust mite population. Or preferably, a miticide application can follow copper spray within two to three weeks.



312 N International Blvd  
Weslaco, TX 78596-9027  
Phone: (956) 447-3360  
Fax: (956) 969-0649  
<http://kcc-weslaco.tamu.edu>

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 part or in whole, 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 or the exclusion of the other products that may also be suitable.

*Thank you!*

A special thanks goes to Rosanna Elizondo-Villarreal for the design and layout of this newsletter.