TEXAS A&M UNIVERSITY-KINGSVILLE

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NEWSLETTER

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DR. FREDERICK PARKER – NEW AGBIZ FACULTY IN KINGSVILLE

Frederick Parker recently started at TAMU – Kingsville, with a 75% teaching appointment in Agribusiness, and a 25% research appointment with the Citrus Center. Fred comes to us with both academic and business experience, having worked for more than decade in private industry before earning his PhD in Agricultural Economics from the University of Missouri – Columbia. Fred also has an MBA Specializing in Finance from George Mason University, and a BBA in Business Management and Entrepreneurship from James Madison University, which he used in successively higher positions in utilities and banking, most recently as a Vice President with CoBank, one of the largest lenders to agricultural cooperatives in the United States. Fred was raised in Virginia where he met and married his wife, Anne, and has lived in four other states with his wife and three sons, Thomas, Stephen and Nathan.

Fred looks forward to working with Weslaco researchers on the economic aspects of their projects, which Fred indicates is often more than just measuring economic impact. Fred explains,

"People often advise 'do not only complain, offer a solution as well.' Measuring economic impact is similar to a complaint. Combining the economic impact with information on the economic viability of a solution is generally more favorably received."

Fred visited Weslaco in September, and hopes that you will introduce yourself to him during his future visits.

Dr. Frederick Parker PhD
Department of Agronomy & Resource Science
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PHOSPHORUS IN N-P-K FERTILIZERS AND IN FUNGICIDES

Phosphorus (Greek, *phos* = light; *phorus* = carrier) is an essential ingredient of all cell protoplasm, nervous tissue, and bones. Phosphorus (P) is essential for proper plant growth and development. Phosphoric acid (H_3PO_4) is normally found in P-fertilizers. Another P-containing product, phosphorus acid (H_3PO_3) is normally found in some fungicides.

Phosphonates and phosphates are disassociated forms of phosphorus acid, and are salts of phosphonic acid and phosphoric acid, respectively. They are known to control *Phytophthora* and other diseases in many plants, including citrus, by imparting direct inhibition of the fungus and by increasing plant defenses. The plant needs both forms of P. Many agricultural companies market P-containing products; some are fertilizers and some fungicides. For example, the Bayer CropScience (Research Triangle Park, NC) markets fungicide Aliette® WDG containing 80% active ingredient, Aluminum tris (O-ethyl phosphonate). Please visit http://www.bayercropscienceus.com and look for the label for Aliette WDG.

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CONTROL OF ASIAN CITRUS PSYLLID AND CITRUS LEAFMINER WITH ADMIRE® PRO

Citrus greening and citrus canker are two of the most serious citrus diseases that threaten the Texas citrus industry. Citrus greening is particularly a fatal disease, which has never been successfully eradicated in areas of the world where it occurs. The disease is caused by a bacterium transmitted by the **Asian citrus psyllid** (***Diaphorina citri***) – a small insect reported for the first time in Texas in 2001, but that has since spread throughout the valley citrus and beyond. Citrus canker on the other hand, is not transmitted by an insect vector, but lesions created by the feeding of **citrus leaf miner** (***Phyllocnistis citrella***) are known to increase the incidence of canker.

Fortunately, both citrus greening disease and citrus canker do not currently occur in Texas, but in an effort to reduce the risk of these diseases, effective management of the psyllid vector of greening and the citrus leaf miner is greatly needed. The efficacy of Admire Pro (imidacloprid) to control both insect pests was tested under field conditions using 4–5 year old orange and grapefruit trees. Admire Pro was applied as a soil drench at the rate of 14 fl oz per acre on May 4, 2006 and compared to an untreated control. Starting three weeks after treatment, densities and infestation levels of Asian citrus psyllid and citrus leaf miner were monitored weekly by sampling 100 flushes per treatment in each variety. Yellow sticky cards were also deployed in each treatment to evaluate the number of Asian citrus psyllid winged adults caught.

Admire Pro treatment significantly reduced the numbers of nymphs of both pests and their infestation levels on new citrus flushes up to six weeks after treatment on both oranges and grapefruit (Fig. 1). Few if any psyllid nymphs or leaf miner larvae were recovered from the Admire Pro treatment. Trap catches also showed that Admire Pro dramatically reduced the densities of adult Asian citrus psyllid populations in the orchards (Fig. 2). The trial is still on-going and data are being collected to gain insights on how long Admire Pro will remain effective against these major pests of citrus in Texas.

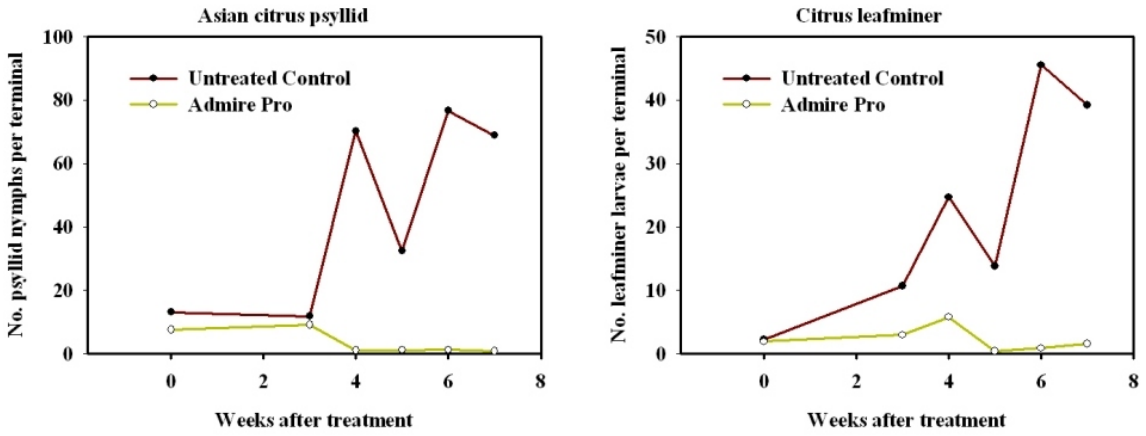

Fig. 1. Effect of Admire Pro treatment on the number of Asian citrus psyllid and citrus leafminer recovered per terminal on grapefruit

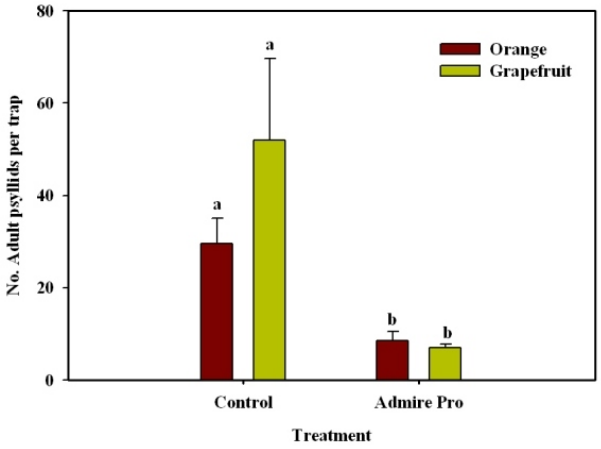

Fig. 2. Number of adult Asian citrus psyllids caught per yellow sticky card over a two-weeks period (mean comparisons were made by variety)

M. Sétamou & J. V. French

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Another systemic fungicide, Prophyt® from Helena Chemical Company (Collierville, TN) contains 54.5% active ingredient, potassium phosphate (phosphorous acid equivalent 34.3%). Please see http://www.greenbook.net/docs/Label/L72070.PDF

An example of a P-fertilizer is Nutri-Phite® marketed by Biagro Western Sales, Inc. (Visalia, CA). Their website has an illustration on how they made their P-fertilizer with a difference. Please see http://www.biagro.com/nutri_phite/np_html/np_content_intro.html

In summary, phosphorus in fertilizers is normally in the form of phosphoric acid (H_3PO_4), which releases hydrogen phosphate and dihydrogen phosphate, both of which are absorbed by the plant. Phosphorous acid (H_3PO_3) releases the phosphonate ion, which is also readily absorbed by plants and provides disease resistance. The systemic fungicide Aliette breaks down to a phosphonite ion and eventually protects the plant from fungus *Phytophthora*. There are P-containing fertilizers and fungicides, both are required.

Mani Skaria

KATYDID INJURY ON ORANGES

We recently inspected a 'Marrs' orange grove north of Donna with some fruit showing spotting, premature coloring and droppage. At first it was thought to be spray related injury since the grower had made a pesticide application 3-4 weeks earlier. However, only scattered fruit in the tree canopies were affected, with no apparent foliar spray injury or chlorosis. Close inspection of the fruit revealed small irregular depressed spots or lesions (<1/4 inch dia.) on the fruit peel and suspected as insect feeding injury. The lesions were generally restricted to the peel and albedo of the fruit, seldom extending into the juice vesicles. Our first clue as to the 'insect critter' causing the problem came when we observed ragged holes cut in the middle and along the margins of new flush leaves. The foliar damage was typical of that caused by the green katydid or 'long horned grasshopper' More intensive examination revealed immature and adult katydids actively feeding and not only causing extensive foliar damage, but also responsible for the previously described spotting / lesions on the developing fruit (Figures 1 and 2).

The Katydid species common on Valley citrus is *Scudderia furcata* Brunner. It is also called a long horned grasshopper because of its extended antennae and tendency to jump and hide amongst the foliage when disturbed. The female katydids insert their eggs into the chewed out edges of the leaves. Nymphs first appear in March and April and take about 2-3 months to mature to adults. Two or more generations generally occur each season with 'Marrs' and navel orange fruit favored targets for 'scud' attack, particularly in the spring and early summer. This year is an exception with the late season katydid generation causing significantly more feeding injury, i.e., fruit spotting and drop.

It is seldom necessary to recommend a pesticide spray specifically for katydid control. However, Lorsban 4E (chlorpyrifos) is labeled at 4-7 pints per acre for control of katydids on citrus. Since Lorsban 4E is routinely included in the summer spray for armored and soft scale insect control it has the added benefit of taking out incipient katydid infestations.

Figure 1 Katydid or 'Long horned grasshopper' (arrow) feeding on citrus foliage.

Figure 2 Katydid feeding injury (spoting/lesions) on 'Marrs' ornage fruit.

J. Victor French, Mamoudou Setamou and Mani Skaria

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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