Texas A&M University-Kingsville

Citrus Center

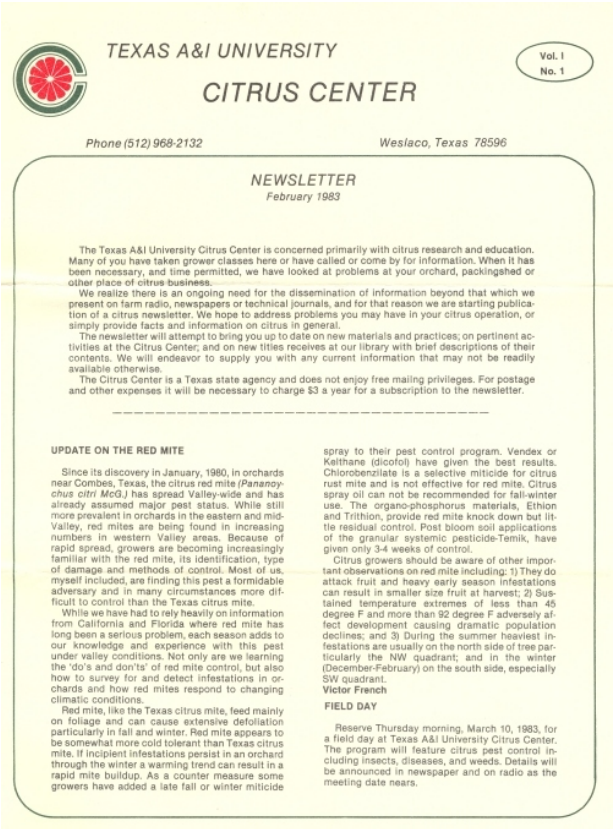
Weslaco, Texas

Vol.25 No.4 NEWSLETTER August 2007

New Look for the Newsletter

John da Graca

The Citrus Center newsletter was first published in 1983, and it kept the same front page design for 12 years until 1995. Another 12 years has passed, and a fresh look to the newsletter seemed overdue. The new look was designed by Rosanna Elizondo-Villarreal, wife of the Center's IT specialist Adam Villarreal, and all administrators and faculty agreed it was the best. We hope you like it too.



TEXAS A&I UNIVERSITY
CITRUS CENTER

Vol. I
No. 1

Phone (512) 968-2132 Weslaco, Texas 78596

NEWSLETTER
February 1983

The Texas A&I University Citrus Center is concerned primarily with citrus research and education. Many of you have taken grower classes here or have called or come by for information. When it has been necessary, and time permitted, we have looked at problems at your orchard, packingshed or other place of citrus business.

We realize there is an ongoing need for the dissemination of information beyond that which we present on farm radio, newspapers or technical journals, and for that reason we are starting publication of a citrus newsletter. We hope to address problems you may have in your citrus operation, or simply provide facts and information on citrus in general.

The newsletter will attempt to bring you up to date on new materials and practices; on pertinent activities at the Citrus Center; and on new titles receives at our library with brief descriptions of their contents. We will endeavor to supply you with any current information that may not be readily available otherwise.

The Citrus Center is a Texas state agency and does not enjoy free mailing privileges. For postage and other expenses it will be necessary to charge $3 a year for a subscription to the newsletter.

UPDATE ON THE RED MITE

Since its discovery in January, 1980, in orchards near Combes, Texas, the citrus red mite (*Panonychus citri McG.*) has spread Valley-wide and has already assumed major pest status. While still more prevalent in orchards in the eastern and mid-Valley, red mites are being found in increasing numbers in western Valley areas. Because of rapid spread, growers are becoming increasingly familiar with the red mite, its identification, type of damage and methods of control. Most of us, myself included, are finding this pest a formidable adversary and in many circumstances more difficult to control than the Texas citrus mite.

While we have had to rely heavily on information from California and Florida where red mite has long been a serious problem, each season adds to our knowledge and experience with this pest under valley conditions. Not only are we learning the 'do's and don'ts' of red mite control, but also how to survey for and detect infestations in orchards and how red mites respond to changing climatic conditions.

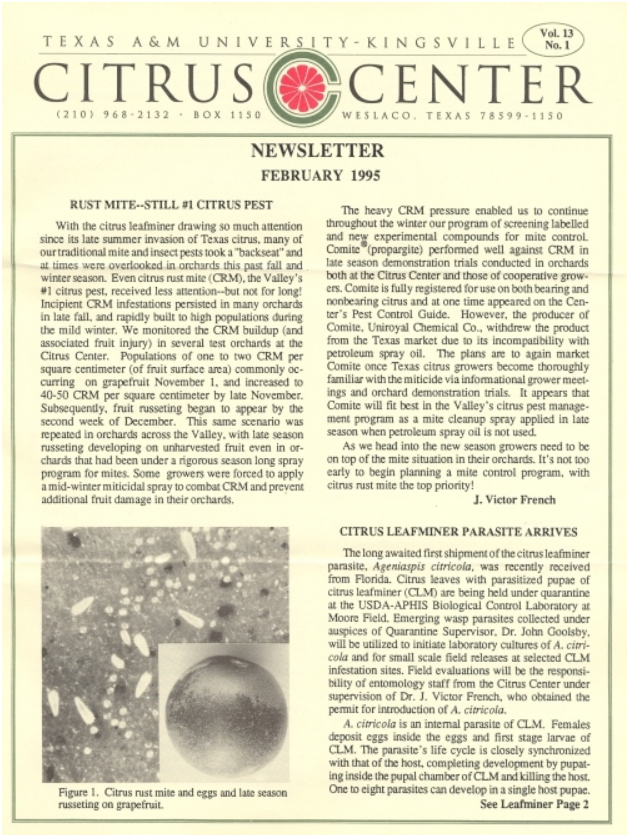
Red mite, like the Texas citrus mite, feed mainly on foliage and can cause extensive defoliation particularly in fall and winter. Red mite appears to be somewhat more cold tolerant than Texas citrus mite. If incipient infestations persist in an orchard through the winter a warming trend can result in a rapid mite buildup. As a counter measure some growers have added a late fall or winter miticide spray to their pest control program. Vendex or Kelthane (dicofol) have given the best results. Chlorobenzilate is a selective miticide for citrus rust mite and is not effective for red mite. Citrus spray oil can not be recommended for fall-winter use. The organo-phosphorus materials, Ethion and Trithion, provide red mite knock down but little residual control. Post bloom soil applications of the granular systemic pesticide-Temik, have given only 3-4 weeks of control.

Citrus growers should be aware of other important observations on red mite including: 1) They do attack fruit and heavy early season infestations can result in smaller size fruit at harvest; 2) Sustained temperature extremes of less than 45 degree F and more than 92 degree F adversely affect development causing dramatic population declines; and 3) During the summer heaviest infestations are usually on the north side of tree particularly the NW quadrant; and in the winter (December-February) on the south side, especially SW quadrant.

Victor French

FIELD DAY

Reserve Thursday morning, March 10, 1983, for a field day at Texas A&I University Citrus Center. The program will feature citrus pest control including insects, diseases, and weeds. Details will be announced in newspaper and on radio as the meeting date nears.



TEXAS A&M UNIVERSITY-KINGSVILLE
CITRUS CENTER
(210) 968-2132 · BOX 1150 WESLACO, TEXAS 78599-1150

Vol. 13
No. 1

NEWSLETTER
FEBRUARY 1995

RUST MITE--STILL #1 CITRUS PEST

With the citrus leafminer drawing so much attention since its late summer invasion of Texas citrus, many of our traditional mite and insect pests took a "backseat" and at times were overlooked in orchards this past fall and winter season. Even citrus rust mite (CRM), the Valley's #1 citrus pest, received less attention--but not for long! Incipient CRM infestations persisted in many orchards in late fall, and rapidly built to high populations during the mild winter. We monitored the CRM buildup (and associated fruit injury) in several test orchards at the Citrus Center. Populations of one to two CRM per square centimeter (of fruit surface area) commonly occurring on grapefruit November 1, and increased to 40-50 CRM per square centimeter by late November. Subsequently, fruit russeting began to appear by the second week of December. This same scenario was repeated in orchards across the Valley, with late season russeting developing on unharvested fruit even in orchards that had been under a rigorous season long spray program for mites. Some growers were forced to apply a mid-winter miticidal spray to combat CRM and prevent additional fruit damage in their orchards.

The heavy CRM pressure enabled us to continue throughout the winter our program of screening labelled and new experimental compounds for mite control. Comite® (propargite) performed well against CRM in late season demonstration trials conducted in orchards both at the Citrus Center and those of cooperative growers. Comite is fully registered for use on both bearing and nonbearing citrus and at one time appeared on the Center's Pest Control Guide. However, the producer of Comite, Uniroyal Chemical Co., withdrew the product from the Texas market due to its incompatibility with petroleum spray oil. The plans are to again market Comite once Texas citrus growers become thoroughly familiar with the miticide via informational grower meetings and orchard demonstration trials. It appears that Comite will fit best in the Valley's citrus pest management program as a mite cleanup spray applied in late season when petroleum spray oil is not used.

As we head into the new season growers need to be on top of the mite situation in their orchards. It's not too early to begin planning a mite control program, with citrus rust mite the top priority!

J. Victor French

Figure 1. Citrus rust mite and eggs and late season russeting on grapefruit.

CITRUS LEAFMINER PARASITE ARRIVES

The long awaited first shipment of the citrus leafminer parasite, *Ageniaspis citricola*, was recently received from Florida. Citrus leaves with parasitized pupae of citrus leafminer (CLM) are being held under quarantine at the USDA-APHIS Biological Control Laboratory at Moore Field. Emerging wasp parasites collected under auspices of Quarantine Supervisor, Dr. John Goolsby, will be utilized to initiate laboratory cultures of *A. citricola* and for small scale field releases at selected CLM infestation sites. Field evaluations will be the responsibility of entomology staff from the Citrus Center under supervision of Dr. J. Victor French, who obtained the permit for introduction of *A. citricola*.

A. citricola is an internal parasite of CLM. Females deposit eggs inside the eggs and first stage larvae of CLM. The parasite's life cycle is closely synchronized with that of the host, completing development by pupating inside the pupal chamber of CLM and killing the host. One to eight parasites can develop in a single host pupae.

See Leafminer Page 2

Video Conference Facility at the Citrus Center

John da Graca

Renovations at the Agricultural Research & Extension Center in Weslaco necessitated disconnecting the Trans Texas Video Network (TTVN) equipment there. One set has been moved to the Citrus Center and is now operational. During the Summer II semester, graduate students at the Center have been taking a statistics class from Kingsville via TTVN (see photo), and in the Fall Dr. Louzada will teach his biotechnology class from Weslaco, and Drs Bhimu Patil and Marla Binzel of the Department of Horticulture will teach classes to students here from College Station

Pesticide Control Guide Now Available in Spanish

Boris Castro

In the June 2007 newsletter the publication of the updated Citrus Pesticide Control Guide was announced. In response to several enquiries, the guide has been translated into Spanish, and is now available in both printed form and on the Citrus Center webpage:

http://kcc-weslaco.tamu.edu/index.html

This should be useful to Spanish-speaking citrus growers and workers on both sides of the border.

Guía de Plaguicidas para el Control de Plagas en Cítricos Ahora Disponible en Español

En la carta informativa de Junio del 2007 anunciamos la publicación actualizada de la Guía de Plaguicidas para el Control de Plagas en Cítricos. Como respuesta a varias inquietudes, la Guía ahora esta también escrita en Español y además esta disponible en versión en papel y en la página Web del Centro de Cítricos:

http://kcc-weslaco.tamu.edu/index.html

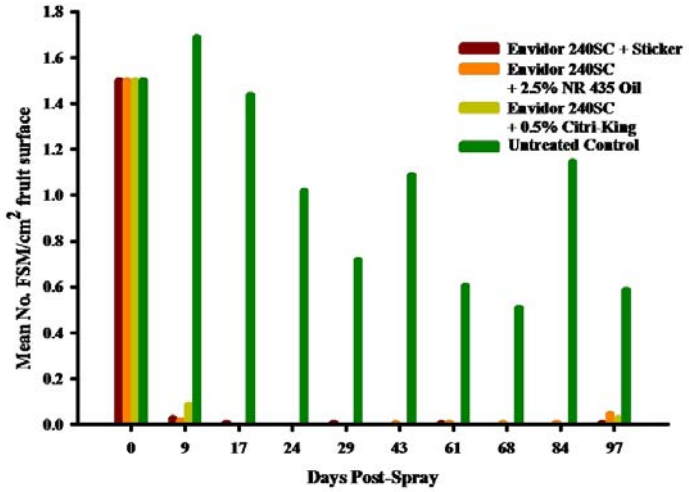
Esta versión será de mucha ayuda para productores de habla hispana y empleados de campo en ambos lados de la frontera.

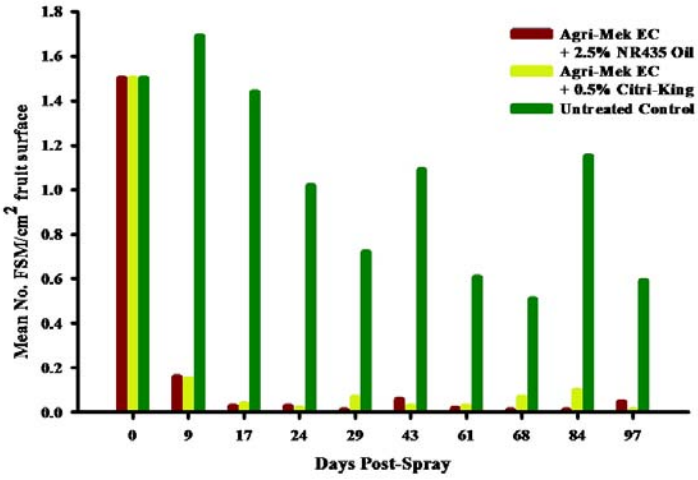
Pest Alert: False Spider Mites

J. Victor French and Mamoudou Setamou

False spider mites (FSM), *Brevipalpus* spp, traditionally reach highest levels in Valley citrus orchards in mid to late summer. This season is no exception with FSM infestations building in several orchards currently being monitored for mite and insect pests. All too often growers are unaware of these 'pesky critters' until their feeding injury begins to show up on the green developing fruit. Circular chlorotic yellow spots first appear that gradually turn into distinct brown necrotic raised lesions on fruit rind or peel. The spotting is often referred to as 'nail-head rust' and is more common on grapefruit than oranges—the former apparently the preferred host by FSM. Fortunately we have not observed any nail-head rust in orchards this season, but it is only a matter of time if FSM infestations are not controlled.

See Pest Alert Page 4





This is Right Time to Fix Packinghouse Air Quality Issues

Mani Skaria

"Delivery problems" are very familiar to citrus shippers, especially in the early season. The fruit often arrives at its destination bruised and rotten.This fruit damage is not visible at time of shipping. The major fruit rots are stem-end rot, sour rot, green mold, blue mold, and brown rot, all caused by fungi.

The degreening process applied to mature, but green, fruit involves the application of ethylene, higher temperature, and higher relative humidity to induce color change. These conditions are also ideal for the development of stem end rot as a result of the growth of fungal spores embedded in the fruit.

Our previous studies in Texas packinghouses have shown that you may have more control over reducing the degreening- related fruit rot if you have the following:

A precise system to deliver and monitor the ethylene gas in degreening rooms

Improved fresh air exchange in degreening rooms

An ability to test for carbon dioxide and carbon monoxide level in degreening rooms

A precise test for relative humidity

Regular removal of infected fruit and cleaning of contaminated surface area

Stem end rot control awareness workshop for the fruit handlers

These measures may sound routine; however, many people fail to achieve a good degreening operating system and every year we see problems. The figures given below show the diversity in air quality parameters that we have measured in the past. Figure 1 shows a wide range in the carbon dioxide concentration in 14 degreening rooms. Figure 2 shows the temperature and relative humidity in four degreening rooms an Figure 3 shows the carbon monoxide in four degreening rooms. The degreening rooms are expected to register more or less similar values. A wide range of values among different degreening rooms in the Valley as shown in the figures indicate that there are some problems to be fixed in some of the degreening rooms. The simple steps given above will definitely produce better control over "Delivery problems," especially in the early part of the coming fruit season when you have to degreen fruit.

Figure 1

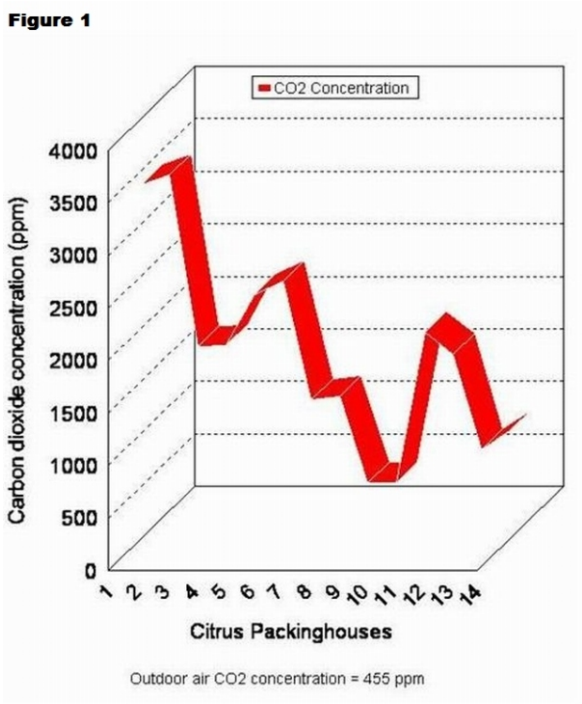


Figure 2

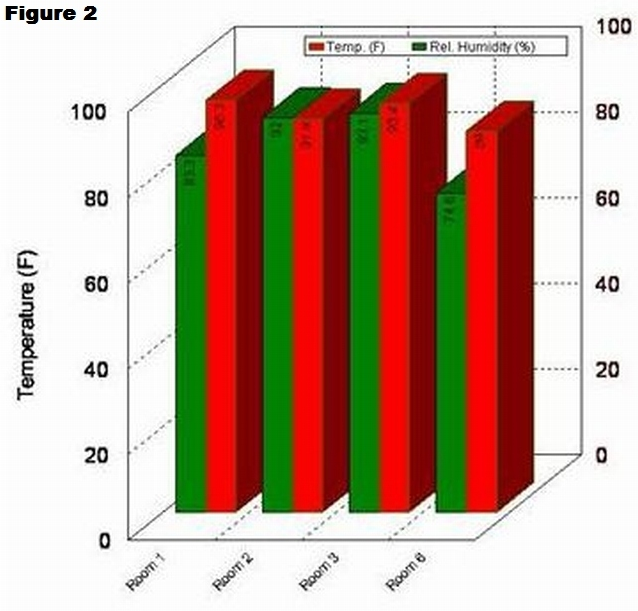
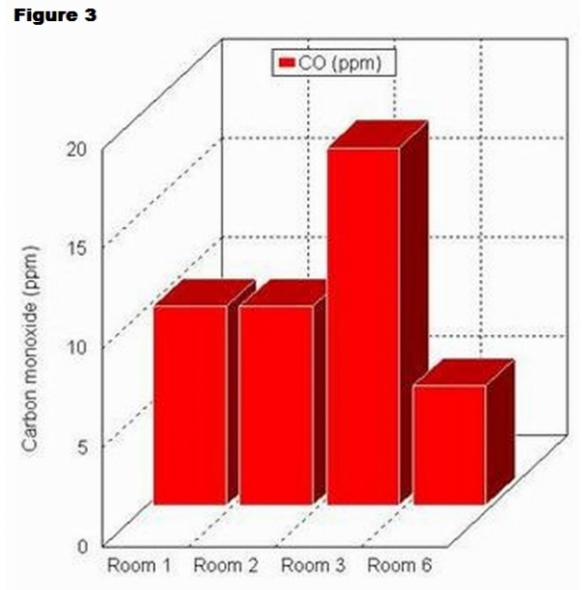


Figure 3



Science Summer Camp for Weslaco High School Students

Eliezer Louzada

Science teaching has been a challenge for many high schools due to the fact that only theoretical lectures, even with the best text books, do not meet the need for student's learning. At the same time it can become very expensive to maintain experiential learning classes, which will require many pieces of equipment and expensive consumables. Furthermore, science teachers are not trained to conduct this kind of teaching, which means that school districts will have to invest in teachers training. Who pays the highest price are the students who are deprived of important knowledge which could change the course of their lives.

To address this problem, the biotechnology laboratory of Texas A&M-Kingsville Citrus Center, directed by Dr. Louzada, entered into a partnership with the Weslaco Independent School District's Science Department to provide a Science Summer Camp for High School students from the two Weslaco High Schools at the Citrus Center. They submitted a grant proposal to USDA-Hispanic Serving Institution Educational Grants Program, and were funded for $ 245,000. With these funds they will equip two high school labs with high tech equipment, will provide hands-on training through a science summer camp for high school students and train some science teachers. This partnership can have a great impact in the lives of many local students.

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

Pest Alert from Page 2

Kelthane MF (dicofol) a very effective miticide for FSM control was recently removed from the market. This has intensified the testing of alternative chemicals for its management. Data from two trials conducted against FSM in 2006 are shown herein. Chemical spray treatments were applied by commercial air blast (200 gal/Acre) to randomized plots of mature 'Rio Red' grapefruit trees. In Trial One—Envidor SC (spirodiclofen) miticide at 18 oz/A in combination tank mix treatments with: Active Plus sticker; 2.5% (5 gal/A) NR 435 petroleum oil; or 0.5% (1 gal/A) Citri-King citrus oil, all provided rapid knockdown and effective long term (ca. 100 days) control of FSM (Fig. 1). In Trial Two—Agri-Mek (abamectin) at 10oz/A in tank mix treatments with: 2.5% NR 435 petroleum oil; or 0.5% Citri-King citrus oil were slightly less effective, with low FSM populations persisting in sprayed trees throughout the trial period (Fig. 2). Based on these data, Envidor SC provided superior FSM control. Moreover, Citri-King a cold pressed oil obtained from citrus peel appears to be an excellent alternative to petroleum oil in combination tank mixes with various miticides.

Phone: 956-447-3360 Fax: 956-969-0649