Texas A&M University-Kingsville

Citrus Center

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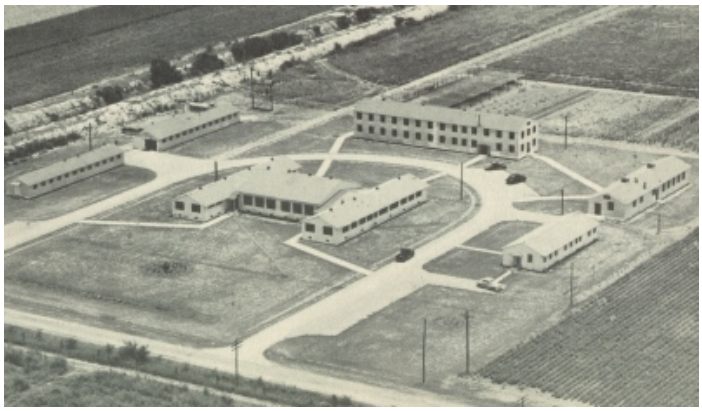

Citrus Center Approaches Its 60th Anniversary

John da Graca

In 1944, a proposal was made to the then Texas A & I College in Kingsville for the establishment of a training center in the Lower Rio Grande Valley to improve citrus and vegetable production. This proposal appears to have been made by the Valley Planning Board, whose president, R. B. McLeaish, was also chairman of the Rio Farms Board of Directors. The idea was to transfer some Rio Farms land to Texas A & I for the training center, but in March 1946 it was announced that the Rio Farms charter did not allow for land donation.

The Weslaco Chamber of Commerce learned of Kingsville's interest in establishing a center, and formed a committee to investigate alternative sites. After examining 17 possible sites near Weslaco, one was identified as suitable, and a recommendation was made to the President of the College. The Chamber donated some funds for the land purchase and began soliciting for additional money. After the land was purchased, it was transferred to Texas A & I College on August 31, 1947.

While this was proceeding, six buildings from the deactivated Army Air Force Field in Harlingen were purchased in April 1947, and all were re-located to Weslaco by May 1948. Although Dr J. B. Corns had been appointed as director of the center project in 1946, he resigned in January 1947, and it took until 1948 to appoint a successor. On July 1st, 1948, Dr Paul Rohrbaugh assumed the position of Director of the Citrus Center, and this is the date upon which effective operations began.

Dr Rohrbaugh died suddenly in December, 1963, and in early 1964 Dr Richard Hensz, citrus breeder at the Center, was appointed to succeed him. His breeding and selection programs lead to the release of two dark red grapefruit varieties, Star Ruby and Rio Red, which brought international attention to the Center.

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To mark the 60th anniversary of the founding of the center, a symposium is being planned for next year. Details of its date and program will be announced later.

The historical data summarized here was extracted from a history term paper written in 1963 by a Texas A & I University student, Stanley D. Casto, who compiled the information from a number of local newspaper articles, and interviews with Dr Rohrbaugh amongst others.

We hope you will all be able to join us in marking this significant milestone.

Citrus Tour In Mexico

J. Victor French

I recently had the opportunity to accompany Jose Luis Silva, Sales Manager for Advanced Microbial Solutions and Oro Agri, Anacleto Rios, Oro Agri Consultant, and Carlos Gonzales, Salesman for Agriliance Co. in Northeast Mexico, to visit citrus orchards in the area south of Monterrey near the city of Montemorelos, Mexico. Situated at the base of the Sierra Madre Oriental mountains, Montemorelos is often called the Orange Capital of Mexico. The reason for the name was obvious as we first toured impressive well managed 'Valencia' orange orchards totaling some 200 acres. Trees were 12-14 ft tall, heavily loaded with fruit, and the orchard floor soil absolutely weed/grass free. The owner, Carlos Montemayor Chapa, personally showed us around. He takes great pride in his orchards and growing top quality fruit. He has taken citrus courses at the Citrus Center, subscribes to our Newsletter and follows a pest, disease and orchard management program similar to that of Valley citrus growers. Orchards were flood irrigated and all canals lined with heavy plastic sheeting to prevent soil bank erosion and washout (Fig. 1).

We were hard pressed to find any mite or insect pests since Mr. Montemayor recently had his orchards sprayed with sulfur. Intensive inspection of foliage and fruit revealed a few citrus rust and false spider mites, as well as low numbers of Asian citrus psyllids on new flush growth. Fruit had no apparent mite feeding injury (russeting or spotting). While his spray program is mainly built around mite control, chemicals for other pests are applied as needed. Moreover, he has a hired J. Isabel Lopez Arroyo, consultant entomologist who is a Cornell graduate. Mr. Montemayor's citrus orchard operation and management was most impressive.

We then traveled to an area near the small town of Allende, Nuevo Leon, Mexico and visited a 65 acre planting of 'Rio Red' grapefruit (Fig.2). Under drip irrigation, this orchard had a fair amount of invasive weed vegetation, but the owner, Jesus Guzman Rodriguez, was just initiating a herbicide program. While he is also a strong advocate of chemical sprays for pest and disease control, we did find some rust mite damaged fruit and foliar injury from greasy spot fungus in his orchard. Citrus psyllid adults and nymphs were also found in low numbers on new leaves. Greasy spot did appear to be the major problem, but trees in general had a good fruit load and Mr. Guzman obviously striving to produce quality fruit. In the near future he plans to expand his operation and plant 85 acres of Clementine mandarins.

My trip to Mexico was a real learning experience and I hope to make a return visit in the near future.

Figure 1 Plastic lined canal on Carlos Montemayor's 'Valencia ' Orchard in Mexico.

Figure 2 Jesus Guzman's 'Rio Red' Orchard . Sierra Madre Mountains in the background.

Citrus Greening and Psyllid Survey Update

John da Graca, Mani Skaria, Victor French and Mamoudou Setamou

During 2006, the Citrus Center carried out a survey funded by USDA-APHIS-PPQ to determine the distribution of the vector of citrus greening disease, the Asian citrus psyllid, in Texas and whether the disease is present. Psyllids were found on citrus in 32 counties across south Texas and in Houston, but not in east, central, north or west Texas.

The USDA-APHIS-PPQ contracted the center to continue the survey in 2007, with special attention being paid to commercial and dooryard citrus in the Lower Rio Grande Valley, and dooryard citrus in Corpus Christi and Houston. These cities were targeted because of the popularity of dooryard citrus, the presence of the psyllid, and the fact that a number of residents have foreign origins and may have been tempted to introduce familiar citrus varieties from overseas. We hired four full time and two part time employees to assist us in this project, and thus far approximately 800 sites in these areas have been visited. No typical greening-like symptoms have been found so far, but approximately 100 leaf samples from trees with various yellow patterns on the leaves have been sent to a USDA laboratory for molecular diagnosis, and all have tested negative for greening.

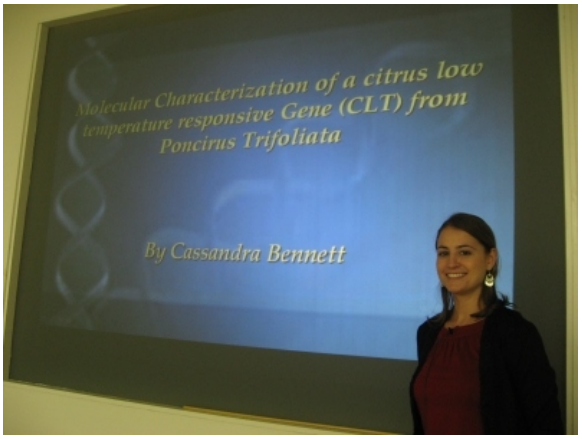
In addition, surveys have been conducted in east Texas and in the Dallas-Ft.Worth area, but no evidence for either the psyllid or the disease has been found.

The USDA is currently in the process of certifying the Citrus Center as a greening diagnostic laboratory. To achieve this, the USDA has equipped the center with a real-time PCR machine, and the research associate in Dr Skaria's lab, Mr Madhu Kunta, has just received training in a USDA lab in Beltsville MD. When certification is complete, we will be able to conduct diagnostic assays of any suspect samples, and only ones giving positive results will be sent to a USDA lab for confirmation.

Student Concludes Masters Degree in Biotechnology

Eliezer Louzada

Cassandra Bennett first came to the Citrus Center as an undergraduate student from UTPA, to participate in the hands-on research internship program at Dr. Louzada's, lab. She did an excellent job as an intern, and upon completion of her Bachelor's degree in biology, she joined the graduate program at Texas A&M University-Kingsville Citrus Center. Her research thesis dealt with the characterization of a gene that is triggered during cold acclimation of the citrus relative *Poncirus trifoliata*. Cassandra proved to be a very responsible student, determined to excel in her research duties, which culminated with her thesis defense last August. Cassandra is currently a science teacher in a high school in the Pharr Independent School District.



Kaolin: A Good Candidate For Asian Citrus Psyllid Control

M. Sétamou & J. V. French

Asian citrus psyllid is becoming an increasingly important pest of citrus in Texas. Because of its ability to transmit the deadly citrus greening disease much effort is directed at developing control strategies to reduce the pest population. Historically, the psyllid has been controlled using broad-spectrum insecticides in areas where citrus greening is established. However, to meet the needs of all citrus growers comprising those who do not use chemical insecticides, alternative control strategies are needed.

The kaolin-based hydrophilic particle film Surround WP is becoming important in non-chemical management of insect pests. Surround WP is made from 95% kaolin clay, a naturally occurring mineral. When applied to plants it forms a white film that repels

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many insect pests. It prevents feeding and egg deposition by insects, sticks to their body and encourages them to move elsewhere. The white film is easily removed by rainfall or simply by washing it off at harvest.

We evaluated the efficacy of Surround in the control of Asian citrus psyllid in a 4-yr old citrus orchard with profuse new flush growth. Monthly applications of Surround WP at 3% (weight:volume) significantly reduced psyllid egg and nymph densities on citrus flushes. More than 90% and 80% control levels were achieved for psyllid eggs and nymphs, respectively – one to two weeks after application. No phytotoxic effects on citrus due to particle film application were observed, and kaolin does not affect photosynthesis. However, because new flush shoots continue to grow on plants and not treated with the particle film, the reduction in psyllid densities were not further sustained after two weeks. To ensure effective psyllid control, we recommend an application once every three weeks during the active flushing period of citrus trees.

Surround WP is recommended at the rate of 25 - 50 lbs per 100 gallons of water (or ¼- 1/2 lb per one gallon of water), with the total amount of water used dependent on amount of foliage to be treated.

Our study showed that kaolin particle film is effective against this citrus psyllid and can be used as an alternative pest management tool against this pest.

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