

CITRUS CENTER

(956) 968-2132

WESLACO, TEXAS 78596

April 2001

NEWSLETTER

Vol.19 No.2

FIRST MAJOR CUTTING OF VIRUS-FREE BUDWOOD FOR 2001 IS BEGINNING NOW

Major citrus nurserymen in the Lower Rio Grande Valley (LRGV), along with smaller citrus growers and homeowners who have citrus along the Gulf Coast of Texas, are being contacted now regarding the availability of budwood for immediate cutting. Some time during 2001 there should be enough budwood available of the major commercial cultivars used by growers in the LRGV to supply the entire industry. When the Foundation Block (FB) or mother trees come into fruit next year, and if they prove horticulturally true to type, the Texas Department of Agriculture will make it mandatory to purchase budwood from the Citrus Center. There have been a few fruit on some of the FB trees this year, and the fruit look to be true to type thus far. The Citrus Center is working with a few nurserymen who produce a large number of trees for the homeowner market along the Texas Gulf Coast. These nurseries will aid in multiplying the supply of non-commercial or dooryard varieties that many in that region and in the LRGV are interested in. It is just as important to make virus-free budwood available of these lesser used cultivars, as they may be symptomless carriers of dangerous pathogens that could threaten the commercial citrus industry in the LRGV.

Please contact Craig Kahlke at the Citrus Center (956-968-2132 or email: c-kahlke@tamu.edu) as soon as possible if requesting budwood or for more information. The budwood is 10 cents per bud, with a minimum of 5 buds per variety. Budwood can be shipped outside of the LRGV for an additional shipping and handling charge.

Craig J. Kahlke

NEW DEAN OF AGRICULTURE AND HUMAN SCIENCES



Dr. Ron Rosati is the new Dean of the College of Agriculture and Human Sciences in Kingsville, succeeding Dr Charles De Young. Dr Rosati was Interim Dean following De Young's retirement in January, and recently met several industry leaders at a Citrus Center Advisory Committee meeting.

He is an agricultural engineer with a particular interest in aquaculture. He has already made his mark in the Valley through his involvement in a shrimp farming project in Willacy County. Ron became a faculty member of Texas A&M University Kingsville in 1996, after a period at Illinois State, and has been Assistant Dean in Kingsville since 1999. He gained his degrees from Cornell (BS & MS) and Iowa State (PhD).

We congratulate him on his appointment and are pleased that he was selected as Dean; we look forward to working with him.

José Amador and John da Graca

ACTIVITIES WITH MONTERREY TECH

A very productive conference was held on the campus of Monterrey Tech University to discuss issues related to water along the Texas-Mexico Border. Speakers took to the stage in pairs, one from Mexico and his or her counterpart from the United States to discuss issues such as river basin hydrology, water policy and legal aspects, the economics and financing of water, environmental considerations, water management and efficiency, geographic information systems (GIS) and water modeling, and the drought's impact on agriculture and society.

A group of scientists from both universities and other agencies, to be known as the Border Water Consortium, was created to facilitate future communication among all concerned in this current water crisis. An internet portal was inaugurated at the conference to facilitate keeping members of the Consortium informed on research developments, educational programs, granting opportunities, and other activities of interest. It can be accessed by visiting the Weslaco center's web site at <http://primera.tamu.edu> or directly at <http://borderwater.tamu.edu>

José Amador

SUCCESSFUL CITRUS ORCHARD MANAGEMENT COURSE

The Citrus Center has just completed a 10-class continuing education course on Citrus Orchard Management. The purpose was to provide updates on all topics for experienced growers, as well as giving a solid background to new growers. Twenty-five people registered for the course, and feedback has been very positive. The weekly classes were given in the evening, except the last one which was a Saturday morning practical class on the Center's South Research Farm in Weslaco. The scientists who gave the classes were Drs French, Skaria, Louzada, Patil, da Graca and Sauls. In addition, the farm superintendent, Mr Elias Hernandez guided the class through the range of farm equipment during the field class.

Unfortunately, there was not time to cover all topics and it is our intention of running more classes in the future.

John da Graca

FINANCIAL INVESTMENT IN CITRUS: A SNAPSHOT

From a managerial perspective, citrus orchards are akin to "factories". The economics of building a factory (i.e., investment) are a little more complex than the economics of producing an annual crop ("running a factory"). The main difference between the two involves the influence of time on the value of money. Suppose, for example, you can safely make a 5% return on your money in a savings account. This then is your "opportunity cost of capital" since if you invest this money in something else, you're sacrificing the opportunity to earn 5%. Moreover, the future earnings from any investment are discounted by your opportunity cost of capital: earning \$1,000 five years from now is exactly equivalent to having \$784 today (because the latter could earn 5% annual compound interest and grow to \$1,000 in five years). Thus, a dollar spent or earned in the near term is more valuable than dollars spent or received in the future.

How does this apply to citrus investments? Consider a series of annual orchard budgets showing the costs and returns per acre for establishment in year one, and then for each year of orchard development and production. For example, the Extension planning budgets show an initial investment of roughly \$1,700 per acre for establishment. The payback period is about seven years when the annual cash flow is positive. Thereafter, the annual cash flow is projected to be between \$600 and \$800 per acre (depending on assumptions about financing, prices, etc.). Remembering that the future income stream is discounted relative to the upfront costs, the present value of a projected 20 year investment is about \$352 per acre (discounted at 5%). The calculated return on this investment (i.e., internal rate of return) is about 5.7%.

What can we say then about citrus investments? First of all, your investment decisions should follow your cash flow projections with **your numbers**, not my numbers. Second, the acceptable return on your money should be clearly specified within your overall business, personal, and family goals. Third, because of the time value of money, it is critical to manage the up-front establishment and development costs. This becomes more important as your "opportunity cost of capital" increases. Fourth, investment profitability is dependent on a relatively long period of production, which highlights the major risk posed by weather events.

For planning purposes, you can receive citrus planning budgets and investment decision spreadsheet templates by contacting Dr. John Robinson in Weslaco at phone: 956-968-5581 fax: 956-969-5639 or jrcr@tamu.edu.

John R. C. Robinson

Associate Professor & Extension Economist
Texas A&M Research & Extension Center

WHISKER MOLD IN ORANGE ORCHARDS

A postharvest fruit rot caused by *Penicillium ulaiense* (commonly known as whisker mold, because of the whisker-like synnemata they produce) was detected in the Lower Rio Grande Valley during the 1992-93 citrus harvest season, along with green mold, blue mold, and sour rot, caused by *P. digitatum*, *P. italicum*, and *Geotrichum candidum*, respectively. Factors that contributed to a high incidence of fruit rot during that period were; long storage periods (in packinghouses) due to a slow market and low prices, and young trees, following a tree-killing freeze in 1989. Though, the whisker mold was not widespread in 1993, its occurrence was the first report from Texas, when it was found again in a noticeable quantity in two orange orchards. Infected fruit was not detected in two packinghouses that were surveyed, however, whisker mold was found in some experimental grapefruit stored at the Citrus Center. A previous study done at the Citrus Center in cooperation with Dr. Cynthia Eayre (USDA-ARS) showed that this fungus is slow growing. Studies in California showed that it was relatively insensitive to imazalil, thiabendazole, and o-phenylphenol. The reoccurrence of this fungus observed in a couple of orchards this year indicate that the inoculum is present in orchards and it will invade when oranges are stored on trees for longer than usual.

Mani Skaria

FALSE SPIDER MITES ABUNDANT

Early season infestations of false spider mites (FSM), *Brevipalpus* spp, are unusually high in some mid-Valley orchards. FSM are not only being found on the foliage, but also in high numbers on last season's grapefruit still remaining on the trees. In one unpicked grapefruit block at the Citrus Center, it was not unusual to count 5-10 FSM per square centimeter of fruit surface area (especially on 'old fruit' in the interior tree canopy). If left uncontrolled, the FSM will rapidly move and infest the green new fruit. A handlens (10X or greater magnification) and keen eye are required to spot the small (1/150 inch) pale red FSM, which are relatively slow moving. However, fruit spotting or 'nail head rust' caused by the feeding of FSM is easy to discern, particularly in mid-season on grapefruit in the interior tree canopy.

All too often FSM go undetected and a grower first becomes aware of an FSM infestation when the spotting or 'nail head rust' appears on the fruit. The damage is most prevalent on inside grapefruit in the lower tree canopy—generally below 4 feet. Symptoms first

appear on fruit as yellow chlorotic areas that gradually develop a central brown necrotic lesion or spot (Fig. 1). The brown spots are irregular shaped (ca. 1/8-1/2 inch in diameter), and become distinctly raised on fruit that has dried i.e., stressed due to water loss. Close examination of the spots often reveal FSM en masse, actively feeding and laying numerous spherical red eggs. Typically, the FSM life cycle—egg to adult, takes ca. 35 days at temperatures between 70° and 85° F.

Citrus growers need to be on the lookout for this 'pesty mite' in their orchards and ready to respond with an effective miticide treatment. Kelthane® MF (dicofol) or Vendex® 50WP (fenbutatin-oxide) are general miticides that provide good control of FSM. Moreover, Narrow Range (NR) 435 petroleum spray oil gives rapid FSM knockdown, but does not provide long term control. Currently, we are also testing Nexter® 75W (pyridaben) miticide for efficacy against FSM. Updates on FSM status and control on Valley citrus will be forthcoming in future Newsletter articles.

J. Victor French



Figure 1. Spotting on grapefruit caused by False Spider Mites (FSM). Arrow shows FSM closeup (85X)- courtesy of Dr. Carl Childers, University of Florida, Lake Alfred, FL.

CITRUS CENTER AND UNIVERSITY OF TEXAS AT BROWNSVILLE LAUNCH NEW TRAINING OPPORTUNITY FOR VALLEY STUDENTS

The Lower Rio Grande Valley is predominantly Hispanic and this segment of the US population has for many years been ranked lower in science career. As the Valley continues to grow rapidly, new opportunities for

See Training Page 4

qualified personnel with scientific expertise will become available, yet there is already a shortage of suitable qualified people.

In an effort to address just one aspect of science education, Dr. Louzada, who has established a biotechnology lab at the Citrus Center, and Dr. Allison Abell from the University of Texas at Brownsville (UTB), have received funding from USDA to enable 15 senior undergraduate students from UTB over the next three years to receive hand-on research experience at the Citrus Center. The first students will begin this summer. While the program is not exclusive for Hispanic students, since most of the UTB students are from this community, it will be the major beneficiary.

Dr. Louzada and Dr. Abell have also applied for funding from the USDA for supporting graduate students in the future. Both TAMUK and UTB are classified as Hispanic Serving Institutions (HSIs) and are therefore entitled to apply for this funding.

Eliezer S. Louzada

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.

FUNCTIONAL FOOD RESEARCH COLLABORATION ACROSS TEXAS

Interest in functional foods is increasing amongst consumers, and citrus industry people realize the need for research. My lab initiated research on optimizing health promoting compounds in citrus in 1997, and established links with several researchers across Texas who have the required expertise and technology. From the industry's point of view, we hope to be able to obtain complete "proof-of-concept" on the health benefits of the compounds based on clinical trials, thus increasing the marketing potential for citrus. The collaborators who are involved in this research are Drs Hassan Ahmed and Naryan Bhat (University of Texas-Pan American), Edward Miller (Baylor College of Dentistry, Dallas), Wallace McKeehan (Institute of Bioscience and Technology, Houston), Leonard Pike (Vegetable & Fruit Improvement Center, TAMU, College Station) and, most recently Jennifer Brodbelt (UT Austin).

So far, much has been learned about the potential health benefits of citrus pectin, and seasonal and varietal effects on lycopene levels in red grapefruit. Current research concerns the role of limonoids in cancer prevention, and the effects of irradiation of functional components of grapefruit.

Bhimu Patil

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.

**NON-PROFIT ORG.
U.S. POSTAGE PD.
PERMIT NO. 2
WESLACO, TEXAS 78596**