Texas A&M University-Kingsville

Citrus Center

Weslaco, Texas

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Groundbreaking Slated for June 23

Plans for the new Citrus Center building have been finalized, and a groundbreaking ceremony is scheduled to take place at the Citrus Center at 5 pm on Tuesday June 23.

Amongst expected dignitaries are the Chancellor of the Texas A & M System, Dr Michael McKinney, the President of Texas A & M University-Kingsville, Dr Steven Tallant, and Texas Agriculture Commissioner Todd Staples. Members of the Valley's legislative delegation have been invited, and hopefully many of them will be able to attend.

Preliminary preparations for construction have already begun, and actual construction is expected to get under way in early July. The project is should to be completed by Summer 2010.

Latest Citrus Center Graduate Students Complete Degrees While Working Full-Time

John da Graça, Mamoudou Sétamou, Mani Skaria & Eliezer Louzada

Three graduate students from the Citrus Center received the degrees at commencement ceremonies during May, 2009. They all shared the challenge of studying while holding down full time jobs, which required many hours of work after hours, and balancing the needs of family life.

Madhura Kunta received the PhD degree from Texas A & M University in College Station. Madhu's dissertation was entitled "Towards broad spectrum disease resistance in citrus" – his committee was co-chaired by Drs Mani Skaria and Bhimu Patil; however major molecular guidance was provided by Dr Eliezer Louzada. He is the third student to complete a PhD in the cooperative program between the Horticulture Department of Texas A & M University in College Station, and the Department of Agronomy & Resource Sciences in Kingsville. Madhu received his MS degree from TAMUK in 2003 under the guidance of Dr Louzada. Since January 2005, he has worked as Research Associate in the plant pathology lab at the Citrus Center.

Mayra Arredondo received her masters degree from TAMUK at the commencement ceremony in Kingsville. She began her studies while serving in the military at the naval air station in Kingsville, completing all her coursework during this time. She temporarily suspended her studies while she settled into a career with USDA-APHIS in McAllen. In 2008, she began a project under Dr Sétamou – her thesis was entitled "Abundance and population of Asian citrus psyllid, *Diaphorina citri* Kuwayama (Hemiptera: Psyllidae) as affected by flush shoots in different host plants". This was a study on the effects of four different citrus species in psyllid populations in residential properties.

Pete Ochoa obtained his masters in Agricultural Science in Kingsville. His committee was co-chaired by Dr Randall Williams in Kingsville, and Dr Sétamou, who provided guidance for his research project on the impact of sour orange trees on the Mexican fruit fly. Pete works for the US Customs and Border Protection as a plant inspector, and also completed his studies as a part-time student. Citrus Center faculty have worked with Dr Williams and his students over several years in the supervision of their projects, and Pete is the latest one to graduate.

Madhura Kunta with daughters

Mayra Arredonado

Pete Ochoa

Compost Use for Citrus Water Conservation and Sustaining Yield

***Shad D. Nelson**, Texas A&M University-Kingsville Citrus Center, Weslaco, TX.*
***Juan Enciso**, Texas AgriLife Extension and Research Station, Weslaco, TX.*

Periodic droughts and rapid urban growth in the Lower Rio Grande Valley Citrus production regions have led to increased interest at methods of preserving water supplies. Several growers in the LRGV utilize low-use irrigation practices, such as drip and microjet spray, which have shown to be economically feasible and viable alternatives to flood irrigation. Another potential water conserving practice is the use of compost underneath the citrus canopy. There exist various sources of compost that are commonly targeted to organic citrus producers. One potential concern for compost use is immobilization of nitrogen from the soil rooting zone as soil microbes use nitrogen in soil to break down the excess carbon added by the compost. We studied the application of bark-chip yard waste compost, originating from the Brownsville city recycling facility, to evaluate whether long-term application would lead to decreased Rio Red grapefruit production. Three five-gallon buckets of bark-chip compost were applied annually for five years (2003-2007) underneath the canopy of Rio Red grapefruit trees under drip, micro-jet spray and flood irrigation practices. The compost source was very low in nitrogen and was not a significant contributor of nitrogen is this study. Trees were fertilized annually with 1 pound of nitrogen per tree to maintain a fertility plan. Under all three irrigation systems, addition of compost led to improved water retention and rapid increase of root density within the rooting zone compared to non-composted trees. Furthermore, average Rio Red grapefruit yields beyond the 1st year after compost application in all three irrigation systems were higher in compost-treated trees than non-composted trees. This suggests that continuous compost application may lead to slight decreased yields the first year of compost application, but by the second year and beyond, citrus yields may actually be slightly improved. Improved soil porosity, root development and soil moisture retention in the upper rooting depths are all positive changes in soil quality that can lead to such improved citrus yields.

For detailed results on these studies see the following papers:

Uckoo, R.M., J.M. Enciso, I.W. Wesselmann, K. Jones and S.D. Nelson. 2009. Impact of compost application on citrus production under drip and microjet spray irrigation systems. *In:* Tennant P, Benkeblia N (Eds) *Citrus II. Tree and Forestry Science and Biotechnology.* 3 (Special Issue I):59-65.

Nelson, S.D., R.M. Uckoo, H. Esquivel, J.M. Enciso, and K. Jones. 2008. Effect of compost in 'Rio Red' grapefruit production in a heavy textured soil. *In:* Hao X-Y (Ed) *Compost I. Dynamic Soil, Dynamic Plant*. 2 (Special Issue 1): 67-71.

Compost under tree canopy

Increased root development at soil surface

The Effects of Citrus Juice on Cardiovascular Markers in Adults with Elevated Plasma Cholesterol and Triglycerides

Farzad Deyhim, *Department of Human Sciences, Texas A & M University-Kingsville**

Every day approximately 2,400 Americans die from cardiovascular disease (CVD); which would mean about one person dies from CVD every 37 seconds. The most common causes for CVD in Americans are usually related to lifestyle (poor diet, inactivity, obesity, smoking, etc.). American diets are thought to be higher in convenience/fast foods, which are usually higher in saturated fat, sodium, refined sugars, and cholesterol in comparison to other countries' diets. In contrast, vegetarians are known to have a lower risk of cardiovascular disease. In the proposed we are evaluating whether drinking 16 ounces of fresh orange juice for 90 days lowers cardiovascular risk factors. In the current study, 23 Texas A & M University Kingsville (TAMUK) faculty, students, and staff with elevated plasma cholesterol and triglycerides are used as the study subjects. Currently, the subjects are drinking 16 ounces of fresh squeezed orange juice daily. The blood samples were collected at the beginning and will be collected after ninety days of drinking fresh orange juice. The ongoing experiment is providing data to evaluate whether drinking orange juice impacts 1) the plasma cholesterol and triglyceride levels; 2) the plasma antioxidant status; and 3) the inflammatory markers present in the blood. If drinking orange juice improves cardiovascular status in people with elevated cardiovascular risk factors, citrus producers of South Texas would be at a forefront of fight against cardiovascular disease.

* Dr Deyhim has a 25% research appointment through the Citrus Center

Texas Legislators Recognize Citrus Center's 60th Anniversary

John da Graça

During the 2009 legislative session in Austin, both houses passed resolutions commending the Citrus Center on its 60th anniversary. The Senate passed its resolution, which was sponsored by Senator Eddie Lucio Jr., on March 3 – the President of Texas A & M University-Kingsville, Dr Steven Tallant, had planned to be present, but had to cancel at the last moment. The House of Representatives passed a similar resolution sponsored by Representative Armando "Mando" Martinez on May 7 – this time President Tallant was present, and he was accompanied by Mr Jimmie Steidinger (citrus grower and member of the Center's Advisory Committee), Dr Allen Rasmussen (Dean of the Dick & Mary Lewis Kleberg College of Agriculture, Natural Resources and Human Sciences) and Dr John da Graça, Director of the Citrus Center.

The Center is honored to receive these two recognitions and express our thanks to the Senate and the House.

Front row (LtoR): Representative Mando Martinez (Weslaco), Representative Veronica Gonzalez (McAllen), President Steven Tallant, Representative Tara Rios Ybarra (Kingsville), Representative Yvonne Gutierrez Toureilles (Chair, Agriculture & Livestock Committee)

Back Row (LtoR): Dr Allen Rasmussen, Dr John da Graca, Representative Aaron Pena(Edinburg), Mr Jimmie Steidinger, Speaker Joe Strauss

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