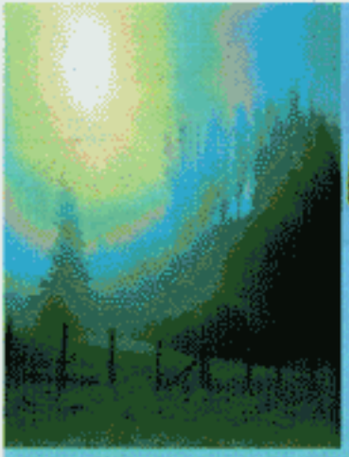

KSARC NEWS

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September, 2001

KIKA DE LA GARZA SUBTROPICAL AGRICULTURAL RESEARCH CENTER .... a

research laboratory of the Agricultural Research Service of the U.S. Department of Agriculture.

FROM THE CENTER DIRECTOR'S DESK....by Jerry Quisenberry

This is the first **KSARC** bimonthly newsletter. The purpose is to keep everyone updated on what's going on at **KSARC.** If anyone wants to contribute information, just drop Ms. Annette Manzanares an e-mail and she will include it. Diane and I want to thank everyone for his or her help in our transition from Hilo to Weslaco.

September will by my sixth month at **KSARC** and it has gotten **HOTTER** every month. I am ready for the temps to go the other way. During this time, Ms. Olivia Pedraza and I have talked with quite a varied group of Valley people as we try to learn the secrets of the agricultural future of the Rio Grande Valley. Opinions have ranged form "continuation of the same" to "agriculture has no future". I know that the truth lies somewhere between these two extremes. These are some of the things that we have learned.

Economics rule. With commodity prices (cotton, sorghum, corn, etc.) as low as they are today, very few in production agriculture are making money. Lack of **WATER** for irrigation is potentially the most limiting factor for future growth of ag. In fact, if the Valley does not do something about conserving water, there may not be any agriculture. Estimates are that 30 to 40% of the water that leaves Lake Falcon (as a note Falcon is only 36% filled) is lost before it reaches the farmer's field. This loss is primarily due to the vast number of open, unlined ditches coupled with inefficient irrigation systems.

TODAY the only crop in the Valley that is making money is sugarcane and <u>it uses lots of water</u>. During our All Staff Meeting on October 30, 2001, we will explore this subject further (each of you please keep the 30th of October open because the program is in the process of development).

And the trucks continue to roll across the border, as daily the amount of fruits and vegetables imported from Mexico continue to increase while processed goods go south into Mexico. In general, people that we have talked with support **NAFTA,** although it did initially cause some problems. When you go to the bridge at Pharr and see the number of trucks crossing, you begin to understand the potential for alien species of plant insects and diseases to enter both the U.S. and Mexico. At present, our methods of detection are quite limited and we depend on U.S. and Mexican producers to use quarantine treatments to control known pest problems. Estimates at the airport in Maui, Hawaii suggest that over 20 new species of plants and insects are introduced every year by airplanes. Of course, most do little damage, but they do change the ecology. As we have seen with the Africanized honey bee or the introduction of the boll weevil into Brazil, a single event can have a devastating effect upon an industry.

NEW EMPLOYEES AT KSARC

The Kika de la Garza Subtropical Agricultural Research Center welcomes the following new employees: Beneficial Insects Research Unit: ***Dr. Don He***, Research Chemist, has been in Weslaco since January 2001. Dr. He comes to us from Stanford University School of Medicine in California. Dr. He works on pheromone kairomones. ***Dr. Jesus de Leon,*** Molecular Geneticist, from the Centers for Disease Control, Morgantown, W.V., will be applying molecular marking technology to enhance biological control projects. ***Dr. Patrick Moran*** joins us from the University of Arizona and will be working on biological control of weeds. ***Dr. Katherine Aronstein,*** formerly of the Walter Reed Army Medical Center in Washington, DC, joins the Honey Bee Research Group as Research Entomologist as of September 4, 2001. Dr. Aronstein will research stress on honey bees during long-range transport of colonies for pollination.

Beneficial Insects Research Unit

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FACILITIES BY TOMMY STANFORD

After reaching the big goal of completing the new building for the Crop Quality & Fruit Insects Research Unit and the Administration, modernization activities continue on several projects. The addition of the pesticide storage and handling facility with a rinse-down pad for farm equipment was completed at the South Farm site. Both the Center's farm support program and the IR-4 project are utilizing the workspace. The renovation of two laboratories in Building 203 has been completed for scientists in the Beneficial Insects Research Unit and there are plans to renovate additional lab space in the upcoming year. The renovation of greenhouses 209 and 210 is scheduled to be completed in September and will provide some research greenhouse space for use by all of the Center's Research Units. Plans to add additional parking spaces the the Highway 83 site are underway. Additionally, the modernization and renovation of other Center facilities are planned with those plans prioritized to request funding for the projects.

NEWS IN RESEARCH

Funding has been received from USDA, Office of International Research Programs, for 3 years for the research proposal entitled "Evaluation of the Immune Response of Lepidoptera to Bacillus thuringiensis". This proposal was developed by Dr. Gary Elzen and Dr. Christina Rodriguez Padilla as a project between the Autonomus University of Nuevo Leon, Monterrey, Mexico and the Beneficial Insects Research Unit, Kika de la Garza Subtropical Agricultural Research Center, Weslaco, TX.

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News in Research (cont'd.)

Dr. Dave Robacker and technician, Ms. Ivich Fraser have been studying host fruit preference by female Mexican fruit flies for the past 2 years. After 3 months of testing preferences of lab strain vs. wild flies for grapefruit and chapote, a native host of this fly in Mexico, wild flies found the 2 fruits equally attractive while lab flies were more attracted to grapefruit. Preference to chapote was shown in both strains of flies when chapote was given during the sexual maturation phase of their lives. The work is significant because it shows the process of culturing Mexican fruit flies i.e. adapting a wild strain so it can be reared in the lab, changing their host preference.

Honey Dew melon fruit folic acid determination tests are conducted by Dr. Gene Lester and staff. Folic acid has been identified as beneficial in arresting the reoccurrence of spinabifida, which affects unborn children, particularly in the Rio Grande Valley. Work is conducted in collaboration with Kevin Cosby, TAEX melon breeder, Weslaco, TX.

Ing. Emilio Hernandez O. from Sanidad Vegetal, Chiapas, Mexico and a team of 4 USDA APHIS International Services technicians from Guadalajara visited the CQFIRU laboratory to begin a cooperative project to establish a new hot water treatment for mangoes exported from Mexico and to the U.S. This project will develop and test treatment times that will allow mangoes to be cooled in chilled water after hot water treatment to kill eggs and larvae of fruit flies. The cooling treatment was suspended in 2001 because live larvae were found in mangoes entering Arizona during 2000 and 2001 seasons. Packing Mexican mangoes for shipments to markets in the U.S. is an important industry in the Rio Grande Valley.

Dr. Enrique Cabanillas is involved in testing Azadirachtin, the active ingredient from the fruits of the neem tree containing insecticidal properties, to control silverleaf whiteflies. Dr. Cabanillas is testing its effectiveness against whitefly by mixing the insect fungus and neem extract and applying them separately as foliar applications on sweet potato leaves. Participating with Dr. Cabanillas are Dr. Walker Jones ,ARS, Weslaco, TX, and Dr. Rosalind James, ARS, Logan, Utah.

Dr. Donald Makus, ARS, Weslaco, TX, found that the application of "Surround" to cotton during the 2001 growing season resulted in reduced early season soil moisture depletion, lower leaf canopy temperatures between 1200-1800 hrs, and improved yield.

Drs. Tom Sappington and Shoil Greenberg, ARS, Weslaco, TX, in cooperation with Drs. Stormy Sparks & John Norman, TAEX, will conduct the last of three replicated trials of an experiment looking at cotton defoliants being applied in combination with half-rates of insecticides.

- Dr. Allan Showler is studying the effects of kaolin particle film on the boll weevil and nontarget arthropods in cotton. Kaolin initially deters boll weevils from feeding and laying eggs on cotton squares in the laboratory and in the field, and it made for lint yields that were up to 136% higher than unprotected cotton in an adjacent field, and up to 57% higher lint yields than an adjacent field that had received two pre-emptive applications of zainphosmethyl. Work needs to continue on the utility of kaolin in cotton, especially ways to keep the kaolin on the cotton plants, even during rains.

- Dr. Patrick Moran reports that during the week of Aug. 27th he and technician Ms. Connie Veland, have completed construction of two shelters housing 200 gallon tanks which will be used to cultivate aquatic weeds, in particular water hyacinth. Combined with smaller tanks already set up in a greenhouse, these facilities will allow controlled studies on the interactions between insect and plant pathogen biological control agents which feed on water hyacinth, a major pest weed in the Rio Grande River and local irrigation canals. These studies will complement efforts already underway in the field to identify and understand the factors that limit the success of biocontrol of this weed.

Lectures and Conferences

U.S. * Mexico Border Summit ***by Ms. Annette Manzanares***

Ms. Olivia Pedraza and I attended the Summit held at UT-Pan American, Edinburg, last Thursday. The Summit's attendees were an eclectic mix of mayors, ambassadors, public officials and corporate board members from border states and cities in the U.S. and Mexico. Some of the things I learned were:*400,000 Mexican immigrants arrive in the U.S. every year - 48% settle in California, while 18.5% settle in Texas; **The State of Texas is responsible for exporting 46% of all U.S. goods to Mexico, primarily in electronics, as opposed to California's export ratio of 16% to Mexico; ***The U.S. Border Region outperformed every major industry in the country in the year 2000, exceeding the national average by 3%;****McAllen is No. 6 out of the top 200 metro areas in the U.S.; *****Brownsville ranked #1 in high tech growth in the U.S. in 2000. It was informative and definitely kept my interest and Vikki Carr is still going strong after 43 years of show biz!

Two countries, one common destiny ***by Ms. Olivia Pedraza***- Dos paises, un destino comun. This was the theme for the US/Mexico Border Summit held at UTPA on August 22-24. Border water, border housing, connecting the border (electric power, natural gas, telecommunications), marketing border opportunities, border health, and meeting the challenge of the border through philanthropy were some of the issues discussed. Dozens of Texan and Mexican government officials including Governor Rick Perry and Mexico's new border czar, Ernesto Ruffo attended and participated in the event. The governor of Nuevo Leon stated that the 4 issues for the border are the trucking situation, management of water, immigration and drugs. Congressman Hinojosa stated that we must find cooperative and innovative ways to improving the quality of life along the border. It was just amazing to hear how the economic and population growth has impacted the border. This growth has brought about challenges - need for more bridges, roads, etc., congested urban centers and border ports. Mexico is our 2nd largest trading partner and Texas is the key to this trade. Two million trucks and 24 million cars pass

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Safety and Health

"Sunwise" by Ed Stein

Did you know?

- Each year, more than 1.3 million Americans get skin cancer.
- There are 3 kinds of ultraviolet (UV) radiation---UVA, which penetrates clouds and ozone; UVB, which is mostly blocked by ozone; and UVC, which is completely absorbed by the ozone layer and the atmosphere.
- The earth has a protective shield, the stratospheric ozone layer, that protects us from all effects of UV radiation.
- The UV Index, a Forecast of the strength of UV radiation, is reported daily on a scale of 0 to 10+. The higher the UV index number, the more sun protection you need.
- Out of 10 million air molecules, about 2 million are normal oxygen, but only three molecules are ozone.
- When you are out in the sun, you should use a sunscreen with a sun protection factor (SPF) of at least 15.
- You should always put sunscreen on at least 15 to 20 minutes before going outside in the sun.
- It is best to wear a hat with a wide brim when you are out in the sun.
- Remember to reapply sunscreen every couple of housrs, or after perspiring or swimming.
- Hippos secrete a pink, natural sunscreen from their skin.

"Be SunWise Cover-up"

(The above facts were published by the U.S. Environmental Protection Agency)

South Farm Update by Andy Cruz

All spring and vegetable trials have been completed. Field plots have been plowed and are ready for fall planting. These trials included IR-4 testing, study of natural enemies of beet armyworm, effects of naturally-occurring fungi against silverleaf whitefly on cucumber, soil mycorrhizea effects on onions and tomatoes, and effect of light intensity on snap bean performance. Cotton trials which included boll weevil, natural enemies of beet armyworm, kaolin effects and defoliation studies are nearing completion. All plots will be shredded and plowed up within the next two weeks. Fall cover cropping will begin in early September. Citrus orchard irrigated last week looks good with fruit sizing up nicely. No end in sight to the drought, so continue practicing water conservation methods. If planning on planting fall crops, check with your local irrigation district about your current acre units available and the possibility of future allotments.

IT (Information Technology)

by Tommy Stanford

As everyone is aware, there continues to be increasing concern for the security of our computer network. This is true, not only in Weslaco, but also throughout the country. The computer support staf at **KSARC** continues to keep abreast of new technology to protect our systems from new threats as they arise. Plans are in place to install firewall protection on our network servers. The goal is to provide us all with additional protection while still allowing access to all of the information and services we need to carry out the **KSARC** research mission. You will also be seeing improvements and continuous updates to our **KSARC** web page so our research mission and activities are readily accessible by everyone.

All Staff Day

KSARC's first Annual All Staff Day has been scheduled for October 30, 2001 at Rio Farms auditorium. The theme for the day is "What is the Future for Agriculture in the Rio Grande Valley"? A good group of speakers has been lined up, lunch will be served, and entertainment will be provided during lunch. Watch for the program in early October. Members of the Committee are: Gerry Latigo, Larry Zibilske, Daniel Moreno, Steve Neck, Frank Eischen, Frank de la Fuente, Olivia Pedraza, Jerry Quisenberry, and Raul Rivera. A BIG thanks to the Committee for what surely will be a great program.

Social Committee

A Social Committee was formed at KSARC. Members are: Orlando Zamora, Fred Gomez, Robert Rivas, Ivich Fraser, Emma Garcia, Analisa Salinas, Olivia Pedraza , Johnny Martinez and Ramiro Balderas. The objective of the Social Club is to promote and encourage a closer bond of fellowship and cooperation among Center employees. The Club will plan events like field days, participation in community activities, potlucks, special events, and other activities. Fundraisers will also be planned. The Committee met on July 25th to work and establish bylaws. All employees of KSARC will be members of the club. It will be up to the individual whether you choose to participate at meetings, events, functions, etc. A vote was taken to see what the name of the Social Committee would be. We will keep you up to date as we progress and welcome any suggestions.

Field Day Committee

In April 2002, KSARC will be hosting a field day at the North Farm. Our Field Day chairman is Fred Gomez. Contact the subcommittee chairperson if you would like to get involved in planning the Field Day. More later.

Happy Birthday KSARC August/ September Employees!

August:	***September:***
Jaime Alejandro	***Peter Carreon***
Joe Bradford	***Ruben Ramirez***
Veronica Cardoza	***Analisa Salinas***
Martin Galvan	***Randy Coleman***
Esteban Garcia	***Guy Hallman***
Reyes Garcia	***Dave McCommas***
Xiaodun He	***Mari Gomez***
Gene Lester	
Jaime Luna	
Robert Mangan	
Robert Pfannenstiel	
Jerry Quisenberry	
Daniel Rivera	
Renee' Sauer	
Robert Zamorano	

(New Employees at KSARC...cont'd. p.2)
Integrated Farming and Natural Resources Research Unit: **Lisa Saenz,** Biological Science Aide, **Veronica Guzman,** Biological Science Aide,; and **Renee' Sauer,** Biological Science Technician, joined the **IF&NRRU** during the past 3 months. We extend a cordial welcome to all of our new employees and wish them well in their respective positions.

(Two countries,.....cont'd. from Page 3)
through the borders each year. U.S. Secretary of Transportation, Norman Mineta stated that $700 million has been allocated to border projects such as I-69 and I-35. The maquila growth has been astounding. There are over 3500 maquilas all along the U.S./MX border. 40% of the average maquila worker's paycheck gets spent in the US. Both the U.S. and Mexico need to built an infrastructure in order to be ready for the future and growth, for companies relocating to the border area, and families moving to the border areas. Transportation and trucks are not the only issues-it is the large volume of people. In the Rio Grande Valley we have a fusion of cultures. We have a growing workforce - bilingual/bicultural but sometimes lacking in job skills. Education and training are critical. Border communities are at the edge of economic growth. Much to my disappointment, Presidents Bush and Fox did not attend the summit, but Vikki Carr more than made up for it.

TRAVEL

CQFIRU research entomologist Guy Hallman completed a 2 week trip (July 21-Aug. 5) pertaining to quarantine disinfestation treatments in Australia and South Africa. He was invited by Horticulture Australia Ltd. to be the outside observer for a citrus disinfestation workshop at Gosford at which he presented a talk on looking into the future of disinfestation treatments. He further traveled to Indooroopilly to visit fruit fly research and Cairns where he presented a talk on the status of irradiation as a disinfestation treatment at the request of SureBeam Australia Ltd. and the Queensland Hort. Institute. After the talk was a barbecue, a good way to keep the participants present and the discussion animated! (A good hint for our seminars!)

The visit to South Africa was sponsored by the SA Dept. Agriculture and was to advise on fruit disinfestation issues and research. South Africa has long accepted irradiation of foods, and has actually done some commercial irradiation disinfestation treatments making it the second country after the USA to use this promising technology. Hazards of the road in S. Africa are shown in the photo.

Dead reference specimens of economically important fruit fly species in both countries were deposited in the **CQ&FIRU** collection.

-Guy

Just the Facts from Ad Min

by Mari Gomez

*AD-700's for purchases over $2,500 due on September 11.
*Approved training requests for fiscal year 2001 due September 12.
*AD700's for purchases under $2,500 due on September 17.
*Last day to use your purchase credit card or the blanket purchase agreements is September 18.
*Purchase credit card logs are due on September 18.

*The end of the calendar year is just around the corner. Check your time sheet carefully and talk to your Unit Secretary about your leave balances. Use-or-lose leave must be approved by Pay Period 23.

*Beginning October 2001, credit card holders must reconcile PCMS every 7 days. This is a new requirement to comply with the new accounting system at the National Finance Center.

*Need to change your direct deposit, federal tax withholdings, or home address? Try the ***Employee Express***! It's fast and easy to use. You can also make changes to your Thrift Savings Plan and Health Benefits during open seasons. Check out the web site at www.employeeexpress.gov/emain.htm
(Continued on Page 6)

(Just the Facts, cont'd. from Page 5)

*Through the National Finance Center Personal Page you can view pervious statements of earnings and leave, life insurance coverage, savings bonds, personal benefits statement, and leave balances. You can also check on your travel vouchers to see if payment has been processed. *Have you ever misplaced a copy of your W2?* You can print a copy of your W2 from the Personal Page at www.nfc.usda.gov/personal/index2.asp

*Check our KSARC's vacancy announcements page at weslaco.ars.usda.gov/

*Thrift Savings Plan open season is November 15, 2001 through January 31, 2002. During open season you can enroll in the program, change your contribution, and change the distribution of your contributions among the different funds.

*Health Insurance open season is November 12 through December 10, 2001. Take the opportunity to change providers and options.

ARS Mission

The Agricultural Research Service conducts research to develop and transfer solutions to agricultural problems of high national priority and provides information access and dissemination to:

- **ensure high-quality, safe food and other agricultural products**
- **assess the nutritional needs of Americans**
- **sustain a competitive agricultural economy**
- **enhance the natural resource base and the environment, and**
- **provide economic opportunities for rural citizens, communities, and society as a whole.**

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