Spring planting has begun!

Jacob Pekar and his crew plant corn research plots using high tech equipment. See story page 4

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March/April 2017
Spring is coming on quickly. Planting in much of Texas is moving fast and most areas are ready for a bit more rain to keep the crop moving. As I travel the state each spring to participate in annual reviews it is amazing to see the variation across the state. We have areas of Texas dealing with drought, residual impacts of wildfire and other areas that really could use a few sunny days.

A special thanks to all that have participated in our pesticide training programs over the past few weeks. Larry Redmon has been coordinating this. If we need to have additional programs please let Larry know and make sure that anyone in your program working with pesticides has the appropriate training and licenses.

We are actively planning the TPPA meeting with regular discussion to identify speakers and themes. The CAST Plant board has identified new papers to be developed on issues impacting Texas and recently released the new article on Plant Breeding in DC. San Antonio, Texas was host for this year’s Commodity Classic and provided a great opportunity to interface with our corn, sorghum and wheat producer leadership groups.

Annual performance reviews for your staff need to be completed by mid-May to get them through the complete process by the end of May. I appreciate those who got an early start. Don’t forget that mid-term evaluations are due to the Department by April 30. Promotion lists including preliminary reviewers and draft document are due by June 1. Thanks to all for getting set up with google scholar to facilitate the tracking of our publications. If you have not yet completed this and have questions, Terry Gentry has a great sheet of instructions for completing the process.

I was able to complete reviews at Lubbock, Overton, Corpus, Weslaco and El Paso since the last newsletter. We also had the opportunity to join with the TSTA in discussions on the future of Seed Certification in Texas.

Our one-year Academic Program Review report was turned in early in March and it is interesting to see the progress that has been made. We are especially appreciative for the partnership funding provided for our teaching lab renovation, new field storage space in the Brazos bottom, new growth chambers and renovated growth chambers, development of gene editing lab, and a commitment to our priority positions pending the end of hiring freeze. We continue to seek partnerships to identify opportunities to expand our greenhouse capacity.

We continue to see progress from our priority task force teams on: Teaching assessment, communications, diversity/climate and graduate curriculum continue to progress with all providing interim ideas and suggestions this month.

It is exciting to participate in multiple visits with others around the campus to discuss major grant funding opportunities. A few examples this month include discussion on our food-water-energy nexus initiative, soil security, UAV’s, wheat genetics, and new initiatives with Texas A&M Commerce. We were able to discuss many of our strategic concerns at meetings of the new-faculty, faculty advisory, faculty meeting and meetings with AgriLife Department Heads and administration as well.

Congratulations to each of you for vesting in this significant activity. Moving our department forward as a leader in agriculture will require continued leadership by our faculty. Thanks to all!

Please remember that the mid-term Promotion and Tenure meeting will be May 17 at 1:30 in Heep 440. The date for the summer meeting has been changed - it is now August 29 at 1:30 in Heep instead of in September.
From a cotton farming standpoint, it may be more important now than ever to know your surroundings, said a pair of Texas A&M AgriLife Extension Service specialists at Lubbock.

In the past, farmers used to plant brown bag seed and had few postemergence herbicide options, said Dr. Seth Byrd, AgriLife Extension agronomist. But with today’s genetic weed-fighting seed technologies and new formulations of old active ingredients, there’s an almost bewildering array of parameters growers must follow to abide by label requirements and minimize risk of damaging their crops or those of others. Growers must also be very aware of susceptible crops and sensitive habitats nearby.

“Many cotton producers will be planting different types of the new herbicide-resistant cotton varieties this spring that carry auxin or other broadleaf weed resistant traits,” Dotray said. “But they and/or their neighbors may have other crops that are highly sensitive to auxin herbicides including grapes.

“Application stewardship (responsibility) is extremely important,” Dotray continued. “It’s our hope that everyone is well-aware of the need to properly utilize these new technologies to avoid any unpleasant issues with off-target herbicide drift to protect their neighbors’ crops…as well as their own.

From the cotton variety perspective, Byrd said it’s important to understand the differences between the new technologies.

The 2,4-D resistant cotton from Dow AgroSciences is called Enlist and includes the W3FE genetic trait package. It’s included in several varieties in the PhytoGen Cottonseed company brand.

The dicamba herbicide-resistant cotton from Monsanto, XtendFlex, includes the XF and B2XF genetic trait packages. These trait packages will be included in several varieties from Deltapine, Americot/NexGen, All-Tex/Dyna-Gro and CROPLAN Genetics brands.

Byrd and Dotray said farmers should take copious notes regarding what is planted in each field. The specialists also stressed the need to always read and follow any and all accompanying label directions when dealing pesticides.

“Both the Enlist cotton and XtendFlex cotton will be resistant to three different herbicides,” Dotray said. “They both will be resistant to glyphosate (Roundup) and glufosinate (Liberty); however, the third piece, which is either 2,4-D choline resistance or dicamba resistance, will be unique to one, but not both technologies. In other words, there are no 2,4-D choline and dicamba cross-resistant cotton varieties.

“Bottom line, and this is important, you can’t spray Enlist Duo, a new herbicide premix formulation containing 2,4-D choline plus glyphosate on XtendFlex cotton and you can’t spray any dicamba formulation, including the new dicamba-resistant formulations of XtendiMax with VaporGrip from Monsanto or Engenia from BASF, on Enlist cotton. If you do, you’ll kill your cotton and possibly your neighbors’ as well as other susceptible crops.”

Dotray said a “systems” approach will be critical for season-long control of troublesome weeds.

The first principle for effective weed management is to start with a clean field. He said tillage, preplant burndown herbicides and preplant incorporated dinitroaniline herbicides such as Treflan and Prowl will play a critical role in starting clean.

“Preemergence and early postemergence herbicides will also play an important role in a dicamba-based or 2,4-D-based cotton weed control systems,” Dotray said. “Mid- and late-postemergence applications may be needed to effectively manage weeds until the end of the season.

“Any missed weeds should be removed, even if you have to pull them individually, because as an example, just one resistant Palmer amaranth plant can yield 600,000 seeds or more, greatly adding to your future weed infestation frustrations.”

When applying these new herbicide formulations, Dotray said growers must be aware of not only the chemicals’ properties, but also the application requirements including herbicide-use rates per application per season, targeted weed size, nozzle selection, ground speed, boom height, wind speed and direction, the buffer requirements needed around the field, and more.


Byrd and Dotray recommend that the total package, including both the variety and issues in the field that a variety or trait package can address, should be considered when making decisions on the value of the new technologies.

“If there is comfort with being able to stick to the label requirements then these technologies provide an excellent tool for weed management and cotton production,” Byrd said.
High Tech planter benefits researchers

It’s not your Daddy’s planter, that is certain.

Jacob Pekar, a PhD student working with Dr. Seth Murray, has begun planting this year’s crop equipped with high tech GPS equipment controlling many aspects of the job.

“This planter is outfitted with a GPS tripping mechanism which allows us to record the exact location of each plot and eliminates much of the human error,” Pekar stated. “We are able to drastically reduce our planting time and reduce the manhours needed to plant. The GPS also records field elevations, indicating low or high spots, which will aid us later with our irrigation.”

According to Pekar, the tripping mechanism is set to release the seeds at precise rates and to leave the four foot alley unplanted.

With this technology the tractor steers itself, resulting in straighter rows with precise spacing. Aside from being more visually appealing, these even rows help reduce the field variation. Freed from the need to guide the tractor, the “driver” can assist the workers on the planter and focus on other potential problems.

The workers riding the planter are responsible for pouring previously prepared seed packets into the planter. Each packet contains a specific genotype which has been carefully cataloged for the research trial.

“This is actually the third year we have had this technology,” Pekar explained. “The first year we had nothing but technical issues, and the second year we were still working out the kinks. This year I am comfortable with it.”

“This is the first year we are using it with confidence,” he added with a smile.

5th Annual
Geronimo and Alligator Creeks
Watershed Clean-up

April 8 - 9:00 a.m. - noon

Come out and make a difference in your environment!
Volunteers may still register on-line at
http://geronimocreek.org/

Crews will meet at three locations along the watershed - Parker Lumber, 1555 E. Court St., Seguin; Navarro High School, 6450 N. Hwy 123, Seguin; and New Braunfels Regional Airport at the corner of Airport Road and Entrance Drive.

For more information contact Ward Ling - 979-845-6980, wling@tamu.edu
Producing quality hay takes planning but can be worth the effort, said Texas A&M AgriLife Extension Service experts.

Dr. Jason Banta, AgriLife Extension beef cattle specialist, Overton, said producing high quality hay can eliminate the need for protein and energy supplementation for beef cattle during the winter.

Dr. Vanessa Corriher-Olson, forage specialist, Overton, said improving Bermuda grass quality can be as easy as correctly timing fertilizer applications and cuttings.

Corriher-Olson said most producers in East Texas don’t maximize the potential of their hay fields because they focus on quantity.

“Their thinking about producing the most bales possible,” she said. “But by fertilizing and harvesting the pastures at the right time, a producer can optimize quality and quantity.”

Many producers are concerned about protein content in hay, Banta said, but total digestible nutrients, or TDN, the livestock equivalent of calories or energy, is important to the nutritional needs of animals. For Bermuda grass and bahiagrass, low TDN content is often a bigger issue than low protein content.

Corriher-Olson said the challenge for producers is to find the point where TDN levels haven’t declined too much and forage yield is acceptable.

Catching Bermuda grass stands during the right window, three to five weeks between cuttings, dependent upon rainfall and sunny days, is the most important factor to produce hay with higher TDN concentrations, she said.

Forage variety choice is also a consideration, she said, as is the time of the season during which the cuttings are done.

Banta said many producers consider the first cutting low quality because it typically includes winter grasses and weeds. But the first cutting is typically the hay with the best nutritional value for cattle.

“A lot of producers think the second and third cutting are the best because they look good, but they are usually the lowest in nutritional quality,” he said. “As temperatures rise throughout the season, plants produce more lignin and that reduces digestibility.”

Fertilization is also a major component in producing quality hay, Corriher-Olson said.

Nitrogen fertilizer should be applied as warm-season grasses start actively growing, she said. She recommends an application of 50-60 pounds of nitrogen per acre as grasses become active and between each cutting.

Corriher-Olson also recommends applications of phosphorus and potassium based on soil tests and yield goals to improve production.

“It takes 50 pounds of nitrogen, 14 pounds of phosphorous and 42 pounds of potassium to produce 1 ton of quality Coastal Bermuda grass,” she said. “But you should always base applications on soil samples.”

Banta said producers should use ammonia nitrate fertilizer ideally, because applications are not dependent upon the forecast. Urea fertilizer requires that producers pay more attention to the forecast to make sure the application provides nitrogen to the soil effectively. The goal for providing nutritional hay for beef cattle is to produce bales with 12 percent protein and 62-63 percent TDN, Banta said.

“Producing hay that meets the nutritional requirements of beef cows during winter can eliminate any need for supplements whether the cows are dry or nursing,” he said.
Dr. Rolando Cruz - One example of Former Students making an impact

By: Beth Ann Luedeker

Many of our students go on to long, productive careers in agriculture. One such former student is Dr. Rolando Cruz, Senior Research Fellow and Scientist at the Phillipine Rice Research Institute (PhilRice) in Nueva Ecija, Phillipines.

Cruz earned his BS in Agriculture and his MS in Agronomy from the University of the Phillipines in Los Baños (UPLB) and spent ten years as a researcher in the Department of Agronomy at the International Rice Research Institute (IRRI) before coming to Texas A&M to pursue his PhD in 1986. During his tenure at IRRI, Cruz received the Outstanding Performance Award for 1980-1985.

At A&M, Cruz studied crop physiology under the supervision of Drs. Wayne Jordan and Malcolm Drew, focusing on sorghum root structural changes and hydraulic conductance in response to drought stress. Even before he graduated, Cruz made it apparent that he would make a difference, as part of his thesis was accepted for publication by Plant Physiology, a well respected international journal, and received high praise.

“Obtaining my PhD from TAMU was both challenging and rewarding,” Cruz stated. “I learned to address a unique research problem, conduct independent research and publish my results. I gained wider perspective by taking courses outside plant science, including classes in soil physics, agricultural engineering and agriculture education.”

All these became relevant when addressing agronomy problems in the field which required a multi-disciplinary approach.

After graduating from TAMU in 1991, and a year as a visiting research associate at Michigan State University, Cruz returned to the Phillipines and joined the reseaerch staff at PhilRice as a Supervising Science Research Specialist. Over time he was promoted to Chief Science Research Specialist in the Agronomy, Soils and Plant Physiology Division and then to Division Head, where he led the programs on direct-seeded irrigated lowland rice, transplanted irrigated lowland rice, favorable rice environment, and high-value products from rice and its environment.

During that time he led the development of the PalayCheck® System, an integrated rice crop management system for irrigated lowland ecosystems designed to increase rice yield and input use efficiency.

Cruz took a break from PhilRice to spend two years with Dole Asia as a Senior Scientist conducting research to reduce banana fruit disorders, and later spent a year as a visiting professor at Charles Sturt University in New South Wales, Australia, researching the response of rice to drought and mechanical impedance to root growth. The Australian research became one of the book chapters published by Cruz, who has more than 200 publications. He is currently the most cited PhilRice scientist, with over 1,200 citations in refereed journals.

In 2015, Cruz officially “retired” from PhilRice, but continues to work at the institute as a senior research fellow. He is the Editor-in-Chief of the Rice-Based Biosystems Journal, an online journal, and mentors young researchers in Agronomy, Soils and Plant Physiology.

Cruz is married to Wilma Trinidad, who earned her PhD from TAMU in Microbiology in 1991. Their three children are now scattered across the globe. Roy and his wife, Sunmi Lee, are in South Korea, where he is a professional photographer and teaches English; Roel taught English in China before returning to the Philippines to work in a training company; and Roanna and her husband, Josh, live in California where she teaches Yoga.

It has been 25 years since Cruz walked across the stage at TAMU to grasp his final diploma. Twenty-five years that were spent making a significant impact on agriculture worldwide.
Students in Dr. Jacqui Aitkenhead-Peterson's SCSC/FUVS 491 course, Undergraduate Directed Research, participated in Student Research Week with posters about their forensic research.

Vanessa Limon, center, was awarded the Texas Sea Grant Special Award for her soil research. She presented a poster on the "Nitirification Inhibition Effectiveness of Dicyandiamide vs. Nitrapyrin in Three Texas Soils". Vanessa’s research on Burleson, Rader and Weswood soils was carried out under the supervision of Dr. Jake Mowrer.

Senior Soil and Crop Sciences student Stephen VanSile conducted research on identifying human decomposition products in soil. His research focused on soil from two real criminal cases in Texas.

Journey Ewell, senior Forensic Investigative Science major, conducted research into the possible use of UV-Vis-NIR to discriminate among hair samples for forensics.
Nearly 200 4-H and FFA students roamed the hills at the Texas A&M Beef Center in early March for practice with land judging, homesite evaluation and soil judging. Dr. Cristine Morgan and her crew conducted the workshop which provided a hands-on learning experience for the student.

Students evaluated several soil pits and used stakes to estimate the slope of the land. At each soil pit, information was provided about pH, nutrients and other factors to be used in their analysis. Coaches were provided with the correct answers.

A graduate student or member of the Aggie Soil Judging Team was stationed at each station to assist and answer questions, while Dr. Morgan roamed the site to answer questions. Graduate student Sarah Vaughn worked with the 4-H students.

“I have been told that students love this workshop,” said Morgan. “Part of the reason is that they are outside where there is plenty of room to spread out,” said Morgan.

The workshop helps to prepare the students for the FFA Land Judging and Homesite Evaluation competition which takes place April 1, and the 4-H Soil Judging competition April 22.

Members of the Aggie Turf Club had the opportunity to visit with Eric Bauer, Director of Agronomy at Bluejack National Golf Course.

Bauer gave the students some great insights on what it takes to be successful in the golf industry, and demonstrated the value of a golf course superintendent during the planning and construction of a new course.

Later members of the club volunteered their time and talents for the Big Event. They spent the weekend preparing and laying sod for a local family.
The American Society of Agronomy (ASA), Crop Science Society of America (CSSA) and Soil Science Society of America (SSSA) selected W. Brandon Smith as one of 18 graduate students members to receive the 2017 ASA, CSSA, and SSSA Future Leaders in Science Award. Brandon was selected in recognition of his interest and engagement in science advocacy. He and the other winners traveled to Washington, D.C. to participate in the annual ASA, CSSA, and SSSA Congressional Visits Day on March 14. During the visit the students each had the opportunity to meet members of Congress and advocate for food, agriculture and natural resources research.

W. Brandon Smith is a third-year Ph.D. candidate under Dr. Monte Roquette, Overton, and Luis Tedeschi (Department of Animal Science). He received a B.S. in Animal Sciences (2012) and a B.S. in Agronomy & Soils (2012) from Auburn University and an M.S. in Animal Science (2014) from the University of Arkansas. Brandon’s research focuses on the nexus of forage agronomy and animal nutrition.

Daniel and Erica Hathcoat are pleased to announce the adoption of their son, Colin, who is 15 months old.

Daniel is an Extension Program Specialist for oilseeds and small grains based in College Station.

New Construction at Farm Services

This new building being constructed in the primary compound at Farm Services will be a support building for the departments of Soil and Crop Sciences and Entomology.

The space will be used to support the field research projects, by providing a place to store equipment, tools and supplies.

Construction will soon begin on an extended overhang attached to one of the other existing buildings which will be used for the storage of larger equipment.

The space has not yet been designated to any specific projects, but that will happen after the interior is completed.
During the Interstate 40 Sorghum Luncheon recently in Amarillo, producers heard the latest on managing sugarcane aphids, weed control and how it all figures into the bottom line as producers manage crop budgets and pricing strategies.

Dr. Ed Bynum, AgriLife Extension entomologist in Amarillo, said, “Think outside of the box.”

Planting earlier, rather than the traditional dates, allows grain sorghum to reach later grain maturity growth stages where sugarcane aphids do not cause as severe yield losses, Bynum said. Planting a commercially adapted sorghum variety with sugarcane aphid tolerance, and seed treatments should also be considered.

Bynum said scouting fields is critical to the battle against the sugarcane aphid. “You cannot let them get too far ahead before you make a treatment or you won’t be able to knock them back where they can’t recover,” he said.

When insecticide applications are needed, Bynum said it is important to spray promptly at the proper threshold levels, use solid rates of either Sivanto Prime or Transform, and use the maximum amount of recommended gallonage per acre for spray equipment. For the Texas High Plains, AgriLife Extension suggests using 5 fluid ounces per acre of Sivanto Prime and 1.5 ounces per acre of Transform. The application rate by air should be 5 gallons per acre and 15 gallons per acre by ground. For the complete AgriLife Extension guidelines on treatments in the High Plains, go to http://bit.ly/2mQJ4QJ.

Once the decision is made to plant sorghum and the seed is purchased, producers need to outline their herbicide program, said Dr. Jourdan Bell, AgriLife Extension agronomist in Amarillo. “We are really going to see a lot of spring annual weeds start to germinate and a herbicide program will be key to controlling them,” Bell said. “In addition to burn-down herbicides for current weed pressure, it is also time to begin applying residual herbicides. “It is important to begin the production season with clean fields because in-season weeds will reduce the yield potential if not sprayed because they rob many of the nutrients and water.”

Bell emphasized the need for a season-long program, which means knowing what weeds typically occur in the field and when they need to be controlled. Most weeds need to be treated before they reach more than 4 inches or the knock-down of any chemical will be limited.

She outlined a number of preplant herbicides that can be used, as well as some that are not yet labeled for sorghum but are a part of the sorghum herbicide research program sponsored by the United Sorghum Checkoff program.

A list of approved herbicides, including the weeds they treat and the crop tolerance considerations, can be found at http://bit.ly/2mSLvm5.

“Herbicides can be expensive, but weed pressure robs our resources and we know there is a return on the investment,” Bell said. “While many producers do not want to invest in herbicides when commodity prices are down, it is important they do not lose their yield potential to weed pressure. There are many effective options that can be worked into a budget.”

DeDe Jones, AgriLife Extension risk management program specialist in Amarillo, continued the discussion on sorghum and the economics of growing the crop and dealing with the issues previously outlined. “While initially it didn’t appear sorghum was going to pencil out in our crop budgets, I would caution that might not be true,” Jones said. “Ask yourself ‘what do I grow most effectively’ before you begin changing crops.”

“We have interactive budgeting software so you can determine your break-even costs to know what you need to make,” Jones said. “Keep in mind you need to factor in all the different components, including input costs, water requirements, crop insurance, and don’t forget about basis. Make sure you look at the total picture.”

The AgriLife Extension 2017 Crop Profitability Analyzer can be found at http://amarillo.tamu.edu/ under Facts and Figures. The Excel document will download and then each individual producer can plug in their acreage and yields.

While it is expected to be a tough year price-wise for many crops, she said planning to market the crop throughout the year leaves room for a producer to take advantage of the different things affecting supply and demand that can cause the price to rise and fall.

Her advice was, “Control your expenses, know your break-even prices and be ready to capitalize on market rallies.”
Possibilities for Industrial Hemp Discussed

Dr. David Williams, University of Kentucky, and Coleman Hemphill, Texas Hemp Industries Assn., visited with Soil and Crop Sciences faculty, staff and grad students about the benefits of industrial hemp, and how it differs from its more widely known family member.

“Industrial hemp pre-dates the civil war,” stated Williams. “It was the main textile fiber worldwide until the mid-19th century when it was replaced by cotton.”

According to Williams, industrial hemp is a summer annual. Since it grows well where corn grows well, hemp might fit well in Texas crop rotation systems, should the legislature allow it to be grown.

Williams explained that industrial hemp is Cannabis sativa L, the same species from which marijuana is derived, with one primary difference. Industrial hemp is derived from plants which have THC concentrations of .3 percent or less. In recreational marijuana, concentrations range from 9 to 99 percent.

The proponents of allowing industrial hemp to be grown in Texas point out that the components of industrial hemp - seeds, oils, and fibers - can already be legally purchased in the state, and are being brought into the state. They are seeking legislation which would allow the crop to be legally grown.

Thirty-one states have already passed such legislation.

Williams stated that there is a market for hemp, though he admits it is not a large market. But he does expect to see a niche market for hemp clothing to emerge, and he sees the potential for hemp farming to be beneficial to Texas farmers.

He also pointed out the potential for hemp fibers to be used in injected molded composite materials such as car body parts, since there is currently a movement in industry to move away from synthetic to natural fibers.

There is still much to be learned. Research is being conducted on a small scale in Canada and the UK to learn more about varieties, herbicide tolerance, bioenergy capacity, economics and more.

Williams and Hemphill were invited to speak and answer questions at TAMU. While in Texas, he also assisted the THIA with their lobbying efforts in Austin.

In Sympathy

Please keep these members of our Soil and Crop Sciences family in your thoughts and prayers.

Donald Jakubik and his family as they mourn the loss of his grandmother, Mrs. Ollie Emilie Jakubik. Donald works for farm services in College Station.

The family of Dr. Daniel Pfannstiel who passed away last month. Dr. Pfannstiel began his service in Extension in 1949 and served as Director of Extension from 1976-1982.
April

3-7 - Ranch Management University - College Station [https://agriliferegister.tamu.edu/productListingDetails/2195](https://agriliferegister.tamu.edu/productListingDetails/2195)
3 - Faculty Advisory Committee Meeting
7 - TWRI lecture “How Lead gets into water and why we don’t want it there” - Scoates Hall, TAMU
12 - Faculty Meeting
14 - Defense Advanced Research Projects Agency (DARPA) Workshop - College Station
20-21 - Bennett Trust Land Stewardship Conference - Kerrville [https://agriliferegister.tamu.edu/BennettTrust](https://agriliferegister.tamu.edu/BennettTrust)

May

3 - Grand Opening of new Scott’s Miracle-Gro turf facility - College Station
3 - Grand Challenges Mini-Symposium - Rudder Tower
12 - Graduation - 9:00 a.m. Reed Arena
15 - Faculty Advisory Committee Meeting
16-18 - Southern Department Heads Meeting
17 - Mid-Term Promotion and Tenure Meeting - Heep 440
24 - Deadline for Staff Evaluations
24 - Faculty Meeting

Save the Date

August 29 - Promotion and Tenure Meeting - 1:30 p.m. HPCT 440 Notice change in date!