In This Issue:
Turfgrass Producers in Dallas
O.D. Bulter Forage Field Day
Stiles Farm Field Day
Cotton Research
Whiskey Research
Photos
more.....
Comments from our Department Head

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Most think of summer days as being hot and lazy, but that is not the case in soil and crop sciences. Year-end financial transactions, new budgets, and planning for upcoming year spending turn up the heat for all the faculty, extension personnel and business office employees. Researchers and Extension personnel are busy tending to crops, harvesting some, and irrigating others and as samples come in our crop-quality labs ramp up.

Summer is also the time for field days. In this newsletter you will find photos and stories about the Stiles Farm Field Day, the BASF field tour, O.D. Butler Forage Field Day, Turfgrass Producers of Texas meeting at the Dallas research and extension center, and the Eagle Lake rice field day. We also celebrated the grand opening of The Gardens where visitors can observe a pivot irrigation system over four of our state’s primary crops.

I travelled to St. Louis to visit with Monsanto about collaborative research and meeting their training needs for the future with a large group of AgriLife scientists. We continue to explore collaboration on unique qualities in our wheat breeding program with Ardent Mills. I chaired the State Seed and Plant Board meeting and participated in several field days, where I had the opportunity to see how our faculty impact Texas producers.

Congratulations to faculty members who are on teams awarded X-Grants for their research projects (see page 5). Our faculty work hard to stay on the leading edge of agriculture research and it is nice when that work is recognized. See the article on page 5 for descriptions of their projects.

Faculty members also help influence policy and guidelines governing agriculture. Kudos to Calvin Trostle and Curtis Adams for their part in changing the role of guar in cropping systems (see page 11), and to Bill Rooney for his collaboration with Forage Genetics International LLC (see page 3). Several new grants have been awarded including grants led by Muthu Bagavathiannan, Cristine Morgan, Diane Boellstorff, Jake Mower, Curtis Adams and Calvin Trostle, and others.

Kudos also to Seth Murray, Muthu Bagavathiannan, Keerti Rathore and their teams for making headlines in major media outlets with their research. It is necessary that the general public, especially those removed from agriculture, hear our story so they can make better informed choices about their purchases and lifestyles.

As the summer continues there will be more opportunities to engage the public. Our faculty and staff have well water screenings and trainings through the Texas Well Owners Network; rainwater harvesting workshops and watershed stewardship programs; summer youth programs and more.

You can support Soil and Crop Sciences research, teaching and extension outreach with your tax-deductible donations.

More Information can be found at http://soilcrop.tamu.edu/giving/
AgriLife Research and Forage Genetics International sign multi-year agreement

By: Kay Ledbetter

A greater interest in forage sorghums from the beef and dairy industries has led to a multi-year agreement between Texas A&M AgriLife Research and Forage Genetics International LLC, or FGI, a subsidiary of Arden Hills, Minnesota-based Land O’Lakes Inc.

“FGI is excited to collaborate with Texas A&M AgriLife Research and Dr. Rooney,” said Shawn Barnett, FGI president in Arden Hills, Minnesota. “For more than 25 years, FGI has led the forage industry with innovative genetic discoveries, variety developments and cutting-edge alfalfa product introductions.

“This collaboration opportunity further expands our efforts to deliver best-in-class forage solutions to our customers and relentlessly pursue advancement in the forage industry,” Barnett said.

Dr. Bill McCutchen, executive associate director of AgriLife Research in College Station, said, “We are appreciative of FGI’s interest in our sorghum breeding program and willingness to invest in future outcomes. Within the agreement, FGI will have an option to license intellectual property developed in the program.

“Not only does this collaboration strengthen our program and FGI’s potential product development, but it will help identify forage sorghum traits that will benefit producers and all of the industry in years to come,” McCutchen said.

Rooney, an AgriLife Research sorghum breeder in the Texas A&M University department of soil and crop sciences, manages an active breeding program with evaluation sites throughout Texas and the U.S. His primary research activities are in the development of grain, forage and bioenergy sorghum parental lines for the production of commercial hybrids.

As commercial interest in bioenergy crops has waned, Rooney, who is the Borlaug-Monsanto Chair for Plant Breeding and International Crop Improvement, has transitioned from bioenergy to forage breeding.

“We’ve been working on forage sorghums for 20-plus years,” he said. “The challenges in the forage industry are to improve quality while maintaining agronomic productivity.”

Given the right hybrid combinations, silage sorghum has yields and quality comparable to corn silage. Further, that productivity is accomplished using less water, Rooney said.

He said the funding from FGI will help expand his forage breeding program, which has a goal of developing sorghum seed and pollinator parents with desirable forage quality and yield.

“Our program has concentrated on seed and pollinator parents with desirable characteristics such as good leaf to stem ratios, producing forage plants of different types and heights,” Rooney said.

Matt Sowder, FGI director of corn silage/forage sorghum in Arden Hills, Minnesota, said, “Texas A&M AgriLife Research represents world class research and aligns with what we want to deliver to our customers. Through this collaboration, FGI can continue our intense focus on technology and hybrid development. Our joint efforts will provide FGI customers with cutting-edge solutions to productivity in their forage operations.”

Rooney said he is continually looking to improve sorghum for whatever challenges may arise, such as sugarcane aphids, foliar diseases and other stress tolerances to improve overall productivity and quality.

He said initially all the breeding process under the new agreement will be conducted at the College Station area facilities.
Landowners fight a constant battle against invasive species of plants. Dr. Vanessa Corriher-Olson, Soil and Crop Sciences professor and AgriLife Extension forage specialist from Overton provided several control options for yaupon during the O.D. Butler Forage Field Day and Camp Cooley Ranch.

Yaupon can be controlled mechanically or chemically, Olson told attendees. During her presentation Charles Fuchs with CF Mulching Services of Easterly demonstrated yaupon removal using a mulching machine.

Chemical control is more lasting, but there are drawbacks there too. Since yaupon tends to grow under desirable trees, care must be taken when applying herbicides to prevent unintended damage. It is also less obvious that plants have been treated, so areas should be marked after spraying.

Corriher-Olson pointed out that there are several ways to use herbicides to remove the yaupon. Some of the options are:

**Cut Stump Treatment** - a treatment of 15 percent Remedy and 85 percent diesel applied within one hour of taking the tree down will prevent regrowth. If the window is missed, a new cut can be made to treat.

**Basal Stem Treatment** - a mixture of 25 percent Remedy Ultra and 75 percent diesel sprayed on the yaupon.

“Yaupon needs to be sprayed under good growing conditions to insure the herbicide is translocated throughout the plant,” Corriher-Olson said. She recommended that sprayed plants stand for at least 12 months to take out the entire root structure.

“If you cut it too soon, it will come back,” she said.

**High volume foliar spray** - a mixture of 1 percent Remedy in water with 1/4 percent surfactant sprayed on leaf material to the point of glistening, but not running off.

“When you are spraying under or around desirable trees you should avoid the heat,” Corriher-Olson said. “High temperatures will cause the herbicide to volatilize into the canopy of the desirable trees. You should also try to avoid contact with the bark, but the canopy is more susceptible to damage.”
Part of President Michael Young’s excellence program, X-Grants is an interdisciplinary program intended to find creative solutions to some of the most important challenges facing the global society.

Several projects selected to receive X-Grants funding include Soil and Crop Sciences faculty. “CRISPER Gene Editing for Healthier Foods and Crop Resistance” is led by Dr. Michael Thomson; “Multi-functional and Sustainable Materials for 3-D Printing Environmentally Adaptive Resilient Buildings” is led by Dr. Paul Schwab; and Dr. Cristine Morgan is involved with “Monitoring Rapidly Changing Arctic Ecosystems Using High-Resolution Satellite-Based Datasets and Artificial Intelligence.

In 2012, a landmark discovery demonstrated that Clustered Regularly Interspaced Short Palindromic Repeat (CRISPR)-based bacterial defense systems can be used for precise gene editing. Since then, CRISPR technologies have begun to transform the fields of medicine, plant and animal research, and microbiology.

“One of the most promising applications of gene editing is to rapidly accelerate plant breeding efforts, as the technology is perfectly suited for a quantum leap in crop improvement due to the power of the technology to precisely modify genes and the straightforward regulatory pathway for this non-transgenic approach,” Thomson said.

“This project will establish the CRISPR Crops Initiative to encourage interdisciplinary interactions between faculty and will integrate advances into the new AgriLife Research Crop Genome Editing Lab to accelerate crop editing projects across the Texas A&M system through the core facility services.”

Schwab explained that one unusual aspects of this project will be printing buildings from local materials while minimizing the environmental and ecological impacts of the construction. The base materials will be clay minerals or soils and will be used to establish the shape of the structure.

The team will seek to find local binding materials (cellulose, resins, lignins) that will hold the clays/soils together, much like straw is used in making adobe bricks, he said. Advanced molecular modeling will help choose and modify binders that will not inhibit the printing process and will cure quickly. A larger scale computer-based model will control the 3D printer to add high levels of efficiency and sophistication to the construction including adaptive insulation, water repellency and the greatest structural stability while using the least amount of materials.

continued next page
Potential applications of the emerging technology include erecting temporary structures in hostile environments, such as health clinics to fight disease in tropical jungles or shelters in remote locations.

The arctic project, led by Dr. Julie Loisel, is made up of ten members across five departments, including Morgan, a soil scientist in the Department of Soil and Crop Sciences, and professors in the departments of Geography, Civil Engineering, Computer Science, and Meteorology. The goal of this pilot project is to incorporate big data into arctic research to generate the first reliable Holarctic map of permafrost-affected ecosystems and to address fundamental research questions pertaining to arctic science.

Land-use and climate change are impacting the world’s ecosystems even in the most remote areas, the grant writers explained. Permafrost soils contain large amounts of organic carbon and nitrogen which may be released if soils warm. Currently there is no effective way to estimate future greenhouse gas emissions in permafrost-affected ecosystems.

According to the grant, this project will combine satellite based datasets with emerging computational and information technologies to monitor and document changes in the permafrost soils and associated greenhouse gas emissions. This information will help determine the accuracy of current soil carbon predictive models, allow for data model comparison, provide new constraints on nitrogen cycling in the arctic and provide new means to monitor permafrost landscapes.

“Ultimately, we will contribute to the ongoing and future Arctic observational networks and provide new means to monitor permafrost landscapes,” the team said.

Well Educated training scheduled in July

Thursday, July 26 from 1-5 p.m. Extension Program Specialist Drew Gholson will be presenting a Well Educated training at the Bellville volunteer fire department building, 511 W. Main St., Bellville.

“This training is intended to help well owners become more familiar with Texas groundwater resources, septic system maintenance and water well construction and maintenance,” Gholson said.

The training is free and open to the public. Space is limited to registration is recommended. Register at: http://twon.tamu.edu/training or by calling (979) 845-1461.

Participants have the option to bring well-water samples to have screened for dissolved solids, nitrates and bacteria. There is a $10 charge per sample. Containers may be picked up at the local AgriLife Extension offices.

For more information about the Well Educated training contact Gholson at dgholson@tamu.edu or (979) 845-1461.

Aggies in Australia

Three Aggies, including two with ties to the Department of Soil and Crop Sciences, are spending eight weeks this summer conducting research in Australia.

Dianna Bagnall, a Ph.D. student studying soil science under Dr. Cristine Morgan; Cody Bagnall, a Ph.D. Biological and Agriculture Engineering student for whom Cristine Morgan is one of his committee members; and Taryn Johnson (archaeology) are representing Texas A&M University at the 2018 Australia-Americas Ph.D. Research Internship.

The internship, offered by the Australian Academy of Science, is an 8-week course in which the students are placed with host researchers throughout the continent.

The three Aggies had the opportunity to tour the Capitol in Canberra before beginning their research programs. From left to right are Taryn, Cody and Dianna.
Producers looking for management practices to help mitigate the potential for loss under the current drought conditions can attend the Cattle Trails Wheat and Stocker Cattle Conference on July 31 in Lawton, Oklahoma. The conference will be held from 8 a.m. to 2 p.m. at the Comanche County Fairgrounds Annex Building, 920 S. Sheridan St., Lawton, OK. Registration is $25 per person and includes educational materials, a noon meal and refreshments.

Producers are encouraged to preregister by contacting their local AgriLife Extension agent, Oklahoma Cooperative Extension county educator or the Southwest Oklahoma area Extension office at 580-255-3674.

The slogan of the conference is “driving your cattle to profits,” although Kimura said the last couple of years have made it tough to generate a consistent profit due to unpredictable weather and market outlook. “We had a very rough year for wheat grain and forage production with less than an inch of precipitation during winter to early spring,” she said. “Then a late freeze further damaged wheat grain.”

Kimura said determining ways to improve efficiency under these difficult situations will be the focus of the joint conference. Topics include a wheat and cattle market outlook; managing market risks; farm bill update; managing stocker health and a weather outlook.

“We need to say, this will be a very important program for our stocker operators who start to purchase their cattle in the fall,” Kimura said.

Industry sponsors also will have their products on display during the event.

For more information on the event, go to: https://bit.ly/2z3i330.

Friends, family and donors gathered at the Scotts facility in late May to officially dedicate the Dean R.C. Potts Conference Room. The Potts family spearheaded fundraising efforts to name the room in memory of Dean Potts. It will serve as a perpetual reminder of his contribution to turfgrass science at Texas A&M.

“Though it is officially dedicated now, it is not too late to donate,” said Dean Pott's son-in-law Ray Prewett. “We are still accepting contributions toward the Potts Endowed Fellowship.”

Kent Potts and Dr. Patrick Stover, Vice Chancellor and Dean for Agriculture and Life Sciences unveil the plaque which now hangs on the wall in the Dean R.C. Potts conference room.

Fred McClure ’76, donor and Executive Director of The Leadership Initiative at Texas A&M, was one of those who spoke during the naming ceremony.

Members of the Potts family cut the ribbon officially dedicating the room.

“Driving your cattle to profits”

Cattle Trails Wheat and Stocker Cattle Conference
New Faces in the Department of Soil and Crop Sciences

There have been a few changes in the department during the first half of this year. Dr. Peyton Smith has joined us as a faculty member in soil carbon, and Dr. Lindsey Hoffman has joined our Dallas Center as an Extension Turfgrass Specialist. There will be more to come about these two after they have a chance to get settled in.

On the College Station campus, there are several new faces, and a few who moved to new offices with a new titles.

John Boswell joined the department this spring as a Post-doctoral Research Assistant for Dr. Terry Gentry. John’s specialty is soil and water microbiology.

J. Connor Cross is a Research Assistant for Dr. Steve Hague at the Cotton Improvement Lab. Connor earned his Bachelor’s in Plant and Soil Science from TAMU in 2017.

Oneida Ibarra joined Dr. Thomson’s Crop Genome Editing Lab as a Research Assistant. Oneida earned her Master’s in Biology at TAMU in 2017.

Sudath Dahanayaka joined the department as a Research Assistant in Dr. Thomson’s Crop Genome Editing lab. He earned his Master’s in Animal Science from TAMU in 2016.

Swati Shrestha, a new Research Assistant with Dr. Muthu Bagavathiannan, earned her Master’s in Weed Science from Mississippi State. Swati chose to pursue weed science after seeing the constant struggle farmers had with weeds in her native Nepal. Her research focuses on gene flow between Johnsongrass and Sorghum.

Shilpa Singh joined the department as a Research Assistant in weed science working with Dr. Muthu Bagavathiannan. Shilpa earned her Master’s in Molecular Weed Science from the University of Arkansas.

Debalin Sarangi is a new Post Doctoral Research Associate working with Dr. Muthu Bagavathiannan. He earned his Ph.D from the University of Nebraska - Lincoln. His specialty is weed biology, ecology and management.

Swati Shrestha
Debalin Sarangi

J. Connor Cross
John Boswell

Oneida Ibarra
Shilpa Singh

Sudath Dahanayaka

Brandon Gerrish has changed roles from graduate student to Extension Program Specialist in small grains working under Dr. Clark Neely.

Brandon became interested in plant breeding during an internship his junior year. To him, the exciting part of the job is being able to assist in the development and testing of new varieties to discover which have the most potential and then introducing those varieties to producers.

Daniel Hathcoat, who has been an Extension Program Specialist in small grains working with Dr. Clark Neely has moved across the hall.

He is now a Research Specialist working in Weed Science with Dr. Muthu Bagavathiannan.
Dr. Seth Murray, Texas A&M Soil and Crop Sciences Associate Professor and Butler Chair, primarily focuses his research on improving the productivity, sustainability and quality of agriculture production through scientific research; most of his work is in corn (maize).

He has recently branched out, slightly, to help his graduate student, Rob Arnold, search for the ideal Texas-grown corn for the production of whiskey.

Arnold, who is working on his doctoral degree in Plant Breeding under Murray, is also the head distiller for Firestone & Robertson Distilling Company, of Fort Worth. Through controlled plant breeding, he and Murray are trying to develop Texas-grown corn varieties with distinctive and identifiable flavors to use in the production of whiskey.

Research is being conducted on non-GMO varieties of corn at the Texas A&M Farm outside College Station. Seed from selected varieties of corn are planted and hand-pollinated to control the genetics of each ear.

Reuters recently wrote and article and created a video about these men, the distillery and Texas whiskey. It can be found at https://www.reuters.com/article/us-texas-whiskey/fields-of-dreams-texas-researchers-seek-to-redefine-u-s-whiskey-idUSKBN1JD09C

“Despite being less than 1% of my research program, the amount of press interest this generated blew me away, from KBTX to the Eagle to NPR and the New York Times,” Murray said. “I found that colleagues at other institutions had similar experiences with their beer and wine related breeding and genetics.”

“I also learned there are opportunities to change the conversation if you are prepared,” he said. “I have interjected the importance of science, of public sector research, and the great things Texas A&M is doing every chance I got!”
Numerous complaints have been received recently regarding the off-target movement of auxin herbicides in parts of South and East Texas. Most of the incidents appear to be off-target movement of 2,4-D.

In much of Texas, observing 2,4-D injury in cotton is common, but some of the incidents this year appear to be from applications in row crops. We know that the off-target movement of the auxin herbicides is in large part the result of not following the application requirements specified on the product labels, including confusion that wind blowing in the direction of susceptible crops (non-Enlist cotton) cannot be overcome by the use of in-field buffers (which are only in place to protect against sensitive areas), incorrect spray nozzles, excessive boom heights, inappropriate tank mix partners, and spraying in a temperature inversion.

Due to the incidences that have already occurred in South and East Texas, Texas Department of Agriculture is taking action to minimize off-target movement in the future. Specifically, TDA will increase the number of use observations and applicator record inspections in areas with higher probability of off-target complaints and also will increase their interactions with distributors.

If these auxin herbicides cannot be kept on-target, there is the potential for additional federal and/or state restrictions to be implemented, OR, access to these products could be lost all together.

Texas A&M AgriLife Extension Service made a major effort to education applicators about the application requirements for XtendiMax, Engenia, and FeXapan, per the required mandatory Auxin training. As of May 15, 2018, it is estimated that over 6400 licensed and unlicensed applicators were trained by Extension and another 580 were trained by Monsanto and BASF at over 180 certification trainings that occurred in English and Spanish.

This is a reminder of the application requirements for Enlist herbicides in cotton.

- **DO NOT APPLY** Enlist Duo or Enlist One IF THE WIND IS BLOWING TOWARD ADJACENT SUSCEPTIBLE CROPS. These susceptible crops include cotton without the Enlist trait, grapes, commercially grown tomatoes and other fruiting vegetables (EPA crop group 8 and 9). **No buffer distance will suffice** when the wind is blowing towards these crops.

- A minimum 30 foot buffer is required between the application area and a sensitive area (THIS SENSITIVE AREA IS NOT THE SAME AS THE SUSCEPTIBLE PLANTS LISTED ABOVE).

- **DO NOT** apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. **DO NOT** allow contact of herbicide with foliage, green stems, exposed non-woody roots.

- **DO NOT** apply at wind speeds greater than 10 MPH in Texas. Although not included on the label, applications should not be made with wind speeds less than 3 mph, because winds speeds above 3 mph helps ensure that a temperature inversion is not occurring.

- Use only approved nozzles and operating pressures listed on the product labels. Several nozzle models for each of these manufacturers are currently approved for Enlist One and Enlist Duo applications. Consult the label for the maximum operating pressures for each nozzle to minimize driftable fine spray droplets.

- Enlist Duo and Enlist One may only be tank-mixed with products that have been tested and found not to adversely affect the spray drift properties. A list of those products may be found at EnlistTankmix.com. Visit this site no more than 7 days before applying these products.

- Use the minimum boom height based upon the nozzle manufacturer’s directions. For all the nozzles listed on the label, the boom height should not exceed 20”.

- Under low relative humidity conditions, larger droplets will reduce droplet evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

- **DO NOT** make applications during local, low level temperature inversions because of increased drift potential. These conditions typically begin to occur as the sun sets and often continue into the morning hours. These conditions are common on nights with limited cloud cover and light to no winds.

- Thoroughly clean equipment used to apply these products before using the equipment to apply other chemicals. Consult the product labels for sprayer clean-out procedures.

- **DO NOT** aerially apply these products.

- **DO NOT** apply these products through any type of irrigation systems.

**Off-target movement minimizing the risk of auxin herbicide drift**

By: Dr. Gaylon Morgan and Dr. Scott Nolte
Guar producer uses Texas A&M AgriLife support to prompt revisions in NRCS guidelines

By: Kay Ledbetter

When a Texas Rolling Plains guar producer found himself to be potentially out of compliance with government guidelines, he turned to Texas A&M AgriLife to help get the guidelines updated.

Guar has been grown in Texas for more than a century and is becoming more attractive to producers because of its drought tolerance and relatively low water use, said Dr. Curtis Adams, Texas A&M AgriLife Research crop physiologist in Vernon.

“Guar being a legume and adapted to the region’s semi-arid dryland agriculture is increasing producer interest,” said Dr. Calvin Trostle, a Texas A&M AgriLife Extension Service agronomist in Lubbock and long-time investigator of guar.

“There are few legumes that are adapted in this type of environment,” Trostle said. “That is why this latest decision is important; to give producers another rotational crop, one that can provide nitrogen to the soil in an area it doesn’t rain a lot.”

Together Adams and Trostle provided updated guar residue measurements and data demonstrating reduced soil erosion due to modern reduced-till soil management. This prompted the U.S. Department of Agriculture-Natural Resource Conservation Service, or NRCS, to revise their guidelines on using guar in a crop rotation.

Initially, NRCS classified guar as a low-residue crop, and therefore under USDA-Farm Service Agency guidelines, grower Guy Spears was not allowed to plant it in rotation with other crops considered low residue under his farm’s conservation plan.

The high-residue parameters are required at a certain frequency in NRCS conservation plans on “highly erodible land,” or HEL. Being out of compliance would make farmers ineligible for a variety of government benefits, including government-sponsored crop insurance.

Adams said.

Spears began working with Trostle and Kelly Lindsey, the local NRCS county director, to push for a change. Then Adams was asked to provide on-the-ground data that, combined with Trostle’s ongoing research, determined guar residue was sufficient to meet NRCS criteria. This prompted a review and update of NRCS policy, which would regard guar as a residue equivalence, comparable to a “high residue” crop.

Fred Schrank, NRCS agronomist in Weatherford, said compliance will be decided on a field-by-field basis. Each producer considering the inclusion of guar must check their original plan or revise the plan.

“The Vernon field office and I will assist in planning HEL fields and farmers decisions,” Schrank said. “We will work with farmers to keep compliance, production and conservation concerns achievable in these matters.”

“Thanks to AgriLife Research in Vernon and the measurements provided, the NRCS re-examined their original documentation from 1985,” Spears said. “I have been notified that after reconsideration, NRCS has ruled a cotton/guar rotation or a continuous guar rotation will be in compliance if a grower is using minimum, no-till or strip till.”

The NRCS was relying on guar residue data from 1985, post tillage, though management practices have changed since then, Adams said. Research showing reduction in erosion with no-till and minimum-till soil management, such as that done by Dr. Paul DeLaune, AgriLife Research environmental soil scientist at Vernon, and others was incorporated into the altered policy of NRCS.

Adams said his lab took residue measurements on harvested guar fields and did visual scoring of percent ground cover on the Spears’ farm to establish the crop’s residue levels.

Adams said he measured a residue concentration at about 2.5 tons per acre.

“This level of cover is less than you would commonly see with grain crops, like corn and sorghum, but it is greater than many broadleaf crops, like cotton,” he said. “On the guar field, we noted that the soil was stable, with no evidence of erosion.”

Adams, Trostle and others are working on multiple federally funded projects aimed at providing more information for producers on guar in relation to agronomics, rotation and other issues.

“Thanks to AgriLife Research in Vernon and the measurements provided, the NRCS re-examined their original documentation from 1985,” Spears said. “I have been notified that after reconsideration, NRCS has ruled a cotton/guar rotation or a continuous guar rotation will be in compliance if a grower is using minimum, no-till or strip till.”

The fact is times change,” Spears said. “What is reassuring as a grower is having Texas A&M, the FSA and NRCS all working together to fix a problem for all of the farmers and leading us in the right direction.”

More information on guar can be found at https://lubbock.tamu.edu/programs/crops/other-field-crops/guar/.
About a dozen of Texas’ leading turfgrass producers toured Texas A&M AgriLife Research facilities where ongoing studies aim to breed the next generation of high quality, resilient turfgrass varieties for the consumer market.

The Dallas turfgrass breeding team, led by AgriLife Research scientist Dr. Ambika Chandra, welcomed the Turfgrass Producers of Texas, or TPT, for a preview of more than 2,000 prospective zoysia and St. Augustine varieties. On-site data collection and evaluation of each variety seek to quantify resilience to disease, heat, drought, shade and input consumption.

“Periodic field days like this allow our industry partners and sponsors a first look at our developing research initiatives,” Chandra said. “In turn, they provide invaluable input on market trends, helping us to focus on traits that satisfy emerging performance demands.”

Her team’s research takes place at the Texas A&M AgriLife Research and Extension Center at Dallas, where the visiting group toured roughly 1,000 square feet of greenhouse research space and about 6 acres of field plots housing shade, disease and drought trials alongside putting green research.

“We are always looking for that next-level adaptability and quality that's going to perform well in the market,” said TPT executive director Brent Batchelor. “The producers liked what they saw in the field at Dallas, especially in zoysia and St. Augustine.”

Chandra said zoysia and St. Augustine lines under testing at Dallas aim to build on her team’s track record in varietal development. Their most recent market-available varieties, which include TamStar St. Augustine, Innovation zoysia and DALZ 1308 zoysia, carry resilience and aesthetic improvements over their respective predecessors, she said. Visit https://dallas.tamu.edu/research/turf/ for comprehensive information on each.

In addition to the campus facility tour, the TPT joined AgriLife Research scientists for discussions on market trends, a briefing on data gathering efforts and a lunch of “southern home cooking.”

“We come for an update on what's going on with the research, but it also gives growers a renewed confidence in the program's ability to breed successful varieties for the market,” Batchelor said.

A public field day showcase for the Dallas turfgrass breeding program is slated for October, Chandra said.
Stiles Farm Field Day

Expectations of foul weather forced nearly all scheduled events indoors for the 55th Annual Stiles Farm Field Day. More than 150 producers travelled to Taylor to hear Extension specialists, including several members of the Department of Soil and Crop Sciences, discuss topics from feral hogs to spray drift.

Members of the Department of Soil and Crop Sciences were an integral part of the day. Clockwise from bottom left: Dr. Ronnie Schnell talks to producers after his presentation on growing sorghum in the Blacklands; Dr. Larry Redmon, Associate Department Head, talks with a field day participant; Dr. Gaylon Morgan, gave an update on cotton pest management. Bottom right: Participants visit with field day sponsors during a break, (Photos by Beth Ann Luedeker)

School for Outdoor Environmental Science Adventures Project

Soil and Crop Sciences Associate Professor and Extension Water Resource Specialist Dr. Diane Boellstorff and her team, including Extension Program Specialists Michael Kuitu and John Smith received a $48,000 grant from Texas Parks and Wildlife to provide outdoor learning education to youths in the College Station area and Rio Grand Valley.

The team is working with Texas Parks and Wildlife this summer to provide outdoor experiences for students who may not otherwise have the opportunity.

The half-day field trips integrate conservation education and outdoor recreation at a variety of state parks to bring the youth closer to the outdoors. The kids had an opportunity to learn how to use binoculars and do some birdwatching, go canoeing, go fishing and learn basic archery.

Diane Boellstorff, far right, prepares youth to do a little birdwatching at the Sam Houston State Park in Huntsville. (Photo by Makayla Faldyn)

Soil and Crop Sciences intern Makayla Faldyn poses with some of the youth at the School for Outdoor Environmental Sciences in Huntsville. Right - youth get some canoeing instruction before taking to the water at the School for Outdoor Environmental Sciences in Huntsville. (Photo by Makayla Faldyn)
The Gardens at Texas A&M is now OPEN!

Soil and Crop Sciences faculty and staff were on hand at the grand opening of the first phase of The Gardens to answer questions, and demonstrate the pivot irrigation system.

Under the pivot visitors will get to see growing crops. Currently there are plots of corn, sorghum, cotton and soybeans. Around the system is a “farm road” donated by Patty and Joe Hlavinka ’56.

Over 1000 people braved the heat to attend the grand opening.

This is just the first phase of gardens which will eventually cover 40 acres. It is open to the public.

Above: Dr. Jourdan Bell greets visitors.

Right: Dr. Patrick Stover opens the official grand opening ceremony.

A picture is worth a thousand words...

Always be careful with your herbicides and pesticides!
Sympathy

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

The family of Dr. James Beard, who passed away May 14 after suffering a stroke. He was buried in Ohio. Dr. Beard was a professor emeritus of turfgrass science and leader in turfgrass research. He served as a research advisor for Scotts Miracle-Gro for many years after his retirement.

Alisa Hairston and her family as they mourn the loss of her grandmother, Betty Zulkowski, who passed away June 12. Alisa is an administrative coordinator for several of our Extension specialists and the turfgrass facility.

Concerns

Olivia Carson who was recently diagnosed with metastatic bone cancer. Olivia is the 15-year-old daughter of Kathy and Chris Carson. Kathy is an instructional assistant professor in weeds science in College Station.

There has not been a crowd-funding site established, but donations are being accepted for Olivia by the Brazos Valley Church of Christ, 625 Graham Road, College Station, TX 77845.
Calendar

**July**
12 - Beaumont Rice Field Day
19 - USDA SCRI Turf Group summer meeting - Scotts facility, College Station
26 - Water Well Education program - Bellville, TX contact Ward Ling wling@tamu.edu
31 - Cattle Trails Wheat and Stocker Cattle Conference - Lawton, OK

**August**
1-2 - Small Grain Workers Meeting - College Station
10 - Graduation Ceremony
13 - Fall semester begins
17 - Retirement Celebration for Dr. Richard White - 5:00 p.m. Scotts facility, College Station
20 - Fall P&T packets due

**September**
04 - P&T Committee meeting
13 - TAMU Dean’s Outstanding Achievement Awards - AgriLife Center

**Save the Date**
October 1-2 - Bennett Women’s Conference - Fredericksburg
October 4-5 - Gene Editing Symposium - College Station
October 10 - Turfgrass Field Day - Dallas
October 15-19 - Fall Ranch Management University