Happy Fall, Y’all!

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Cooler air has passed through College Station, reminding us that fall is indeed on the way.

September storms have brought much needed rains, though the timing has been less than advantageous for our cotton researchers. Soggy bolls hang on the defoliated plants while we wait for the soil to dry out enough to get equipment into the fields. Corn and grain sorghum harvests continue around the state. Our variety testing program has only two locations at which grain sorghum will be harvested and four corn fields. Data is posted on the varietytesting.tamu.edu website as quickly as it is generated to help producers make informed decisions for the upcoming growing season.

Dr. Keerti Rathore has been in the news with his research into low-gossypol cottonseed. The USDA has opened the door to the possibility of feeding global citizens and a wider array of animals with cottonseed. See story on page 4.

This month we welcomed two new faces to the Soil and Crop Sciences family. Murilo Maeda, not a new face but a new location) has begun his duties as the Extension Cotton Specialist in Lubbock; and Reagan Noland has joined as our Extension Agronomist at the San Angelo center. It has been a while since we had a presence in San Angelo, and we are very happy to once again be able to provide outreach to the producers in that part of the state.

Kudos to the turfgrass team for a very successful field day at the new Dallas facility. Speakers presented a wealth of timely and beneficial information there. Lindsey Hoffman did a great job putting it together so soon after joining the department. See more on page 10.

Hats off to our graduate students for their first Genome Editing Symposium. They did an excellent job organizing and conducting this event, and included a great slate of speakers to present timely information. Photos and story are on page 11.

We are looking forward to the society meetings coming up the first week in November. Congratulations to Dr. Amir Ibrahim and Dr. Seth Murray who will be honored as Fellows at those meetings. Congratulations also to our three undergraduates - Savanna Shelnutt, Nicole Shigley and Caitlyn Lakey - who have been selected as Golden Opportunity Scholars.

Our harvest celebration is coming up October 26. We are looking forward to a fun evening with friends, co-workers and colleagues. Please join us if you are available!

I will be travelling extensively in the upcoming weeks, attending the Borlaug Dialogue and World Food Prize, the CAST annual meeting and then the society meetings.

Fall is in the air and the holiday season is just around the corner!

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More Information can be found at http://soilcrop.tamu.edu/giving/
Kimura named AgriLife Extension state peanut specialist

By: Kay Ledbetter

Dr. Emi Kimura has been named the state peanut specialist for Texas A&M AgriLife Extension Service.

Kimura joined AgriLife Extension in 2015 as an agronomist serving the Rolling Plains and surrounding areas from the Texas A&M AgriLife Research and Extension Center south of Vernon.

Dr. Larry Redmon, AgriLife Extension program leader and Texas A&M University soil and crop sciences associate department head in College Station, said Kimura will continue a long-standing tradition of having the state peanut specialist based in Vernon.

When the Vernon agronomist position was open for two years, the state peanut specialist position was transferred to plant pathology in Lubbock in the interim, and now the position is being returned to Vernon, he said.

“Emi is an excellent agronomist, who, as a forage scientist, has become an excellent cotton, wheat, canola, etc. specialist,” Redmon said. “She is well-respected by the industry, growers and AgriLife Extension county agents.”

Kimura’s AgriLife Extension associate, Jonathan Ramirez, has conducted the peanut work in the past for other agronomists, so she is already familiar with the crop and will do well in the role, Redmon said.

Texas is the second largest peanut-growing state in the U.S. and is unique in that it grows all four types of peanut. The majority of Texas peanuts are grown within 90 miles of Lubbock, with Gaines County being the top peanut-producing county in the U.S. There are also pockets of peanut growers in the southeast Panhandle, the Vernon area, south of San Antonio and in the Comanche County area.

Kimura said she will begin working on statewide cultivar trials, management of peanut diseases, herbicide-resistant weed control, organic peanut production systems and, most importantly, outreach efforts through publications, field days and tours with producers.

She will closely work with Texas Peanut Producers Board and deliver information generated from applied research trials. Information generated from Kimura’s program will be updated in the variety testing website at http://varietytesting.tamu.edu/peanuts/.

After graduating high school in Kyoto, Japan, Kimura moved to the U.S. and earned her bachelor’s and master’s degrees from the University of Wyoming and doctorate from Washington State University.

She completed her postdoctoral work with the Washington State University department of crop and soil sciences. During her graduate and postdoctoral work, she specialized in forages and crop management.

Kimura has conducted cultivar trials with cotton, small grains, cool-season grasses and canola. She also has run multiple studies on nutrient management and planting population studies on cotton and wheat. She said she is continually looking for alternative crops that can fit into area cropping systems and be environmentally and economically sustainable.

Kimura said she believes including the peanut program will further improve current agronomy programs for clientele in Texas.
Cottonseed ground into flour to deliver protein to millions of people, a project to which Dr. Keerti Rathore has devoted more than half his professional career, is one step closer to reality.

Rathore, a Texas A&M AgriLife Research plant biotechnologist in College Station, received word that Texas A&M’s “Petition for Determination of Non-regulated Status for Ultra-Low Gossypol Cottonseed (ULGCS) TAM66274” has been approved by the U.S. Department of Agriculture’s Animal and Plant Health Inspection Service, or APHIS.

Texas A&M University Chancellor John Sharp, who oversees Texas A&M AgriLife Research along with 11 universities and seven state agencies, said Rathore’s work will have a dramatic effect across the world.

“The work and dedication of Dr. Rathore has paid off,” Sharp said. “He and his team exemplify the values of the Texas A&M System, and because of them, more than half a billion people across the world may have access to a new form of protein, and our farmers will be able to earn a much better living.”

Through a project funded by Cotton Incorporated, Rathore and the Texas A&M team have developed a transgenic cotton plant – TAM66274 – with ultra-low gossypol levels in the seed, while maintaining normal plant-protecting gossypol levels in the rest of the plant.

Dr. Kater Hake, vice president of agricultural and environmental research at Cotton Incorporated, said it has been a decades-long journey.

“Gossypol suppression in cottonseed has been part of our funded research portfolio for over 30 years,” Hake said.

Tom Wedegaertner, director of cottonseed research and marketing at Cotton Inc., underscores the potential of the breakthrough and the journey through the regulatory process.

“Gossypol in the leaves and stalks of the cotton plant serve as a pest deterrent, but its presence in the seed serves no purpose,” Wedegaertner said. “The more widespread use of cottonseed as a livestock feed and even for human consumption has been stymied by the natural levels of gossypol in the seed. As we progress through the regulatory review, the ability to utilize the protein potential in the seed gets that much closer.”

The recent USDA action confirms that TAM66274 and any cotton lines derived from crosses between TAM66274 and conventional cotton or biotechnology-derived cotton granted non-regulated status by APHIS are no longer considered federally regulated articles, he said.

For the past 23 years, Rathore has been determined to create cotton plants that produce seeds containing gossypol well below what the U.S. Food and Drug Administration considers safe levels while maintaining normal levels of gossypol and related chemicals in the foliage, floral parts, boll rind and roots.

Gossypol, while toxic to humans and monogastric animals such as pigs, birds, fish and rodents, is useful to cotton plants for defense against insects and pathogens. Therefore, cottonseed containing gossypol is currently used mainly as ruminant animal feed, either as whole seed or cottonseed meal after oil extraction.

“Biotechnology tools that made the ULGCS technology successful had just become available when I started looking at the potential to make this new source of protein available to hundreds of millions of people,” Rathore said.

“I also realized the value to cotton farmers everywhere of removing gossypol from the cottonseed because such a product is likely to improve their income without any extra effort on their part or additional input,” he said. “Such a product can also be important from the standpoint of sustainability because farmers will produce fiber, feed and food from the same crop.”

Want to know more? Read the full article on the TAMU Soil and Crop Sciences website http://soilcrop.tamu.edu/ultra-low-gossypol-cottonseed/.

Dr. Keerti Rathore, a Texas A&M AgriLife Research plant biotechnologist in College Station, has devoted his career to making cottonseed a viable food source. (Texas A&M photo by Lacy Roberts)

Above: Seeds containing gossypol have glands showing up as black specs.
Below: The glands are still there, but are much lighter, reflecting the very low levels of gossypol in the deregulated cottonseed.

(Texas A&M AgriLife photos by Dr. Devendra Pandeya)
Bioenergy or high biomass sorghum can be grown in water-stressed situations and still produce good yields, according to a Texas A&M AgriLife Research study being conducted at Bushland and in Kansas.

Dr. Qingwu Xue, AgriLife Research plant physiologist in Amarillo, said this year’s environmental conditions at Bushland provided an excellent opportunity to evaluate drought tolerance and the water-use efficiency, or WUE, of the crop.

This is the first of a two-year study funded by the U.S. Department of Agriculture South Central Sun Grant Program.

Co-investigators include Dr. Jourdan Bell, Texas A&M AgriLife Extension Service agronomist, Amarillo; Dr. Bill Rooney, AgriLife Research sorghum breeder, College Station; Dr. Sushil Thapa, AgriLife Research assistant research scientist, Amarillo; and Dr. Robert Aiken, Kansas State University crop physiologist, Colby, Kansas.

“We are tasked with determining biomass yield performance, water use, drought tolerance and WUE under water-stressed conditions,” Xue said.

Bioenergy sorghum has been identified by the U.S. Department of Energy as the primary bioenergy crop to meet the potential biomass demands for cellulosic ethanol production and other types of renewable energy.

Alternatively, the bioenergy sorghum can be used as a forage crop for cattle and dairy feeding, Xue said.

“In this study, we are investigating six photoperiod-sensitive bioenergy or high biomass sorghum genotypes provided by the AgriLife Research sorghum breeding program in College Station,” he said.

The study is being replicated in Colby, Kansas. At both locations, these genotypes were grown at three water levels: dryland and under irrigation to meet 50 percent and 100 percent evapotranspiration, or ET, demand.

“From the middle of May to Oct. 5, this crop only received 5 inches of rain, which was extremely dry for dryland plots during the growing season at Bushland,” Xue said. “As such, there are huge differences in crop yield and performance among the three water levels.”

Plants under dryland conditions grew about 3-5 feet tall but plants under irrigation at 100 percent ET level were up to 15 feet tall, Thapa said.

In this study, though, Xue and Thapa said they are more interested in the crop performance under water-stressed conditions such as irrigation at 50 percent ET demand and dryland.

“At 50 percent ET irrigation, some sorghum genotypes can still produce over 10 tons of biomass per acre and grow up to 10 feet tall,” Xue said. “This is the best fit for producers with limited irrigation situations. Even the dryland, with only the 5 inches of moisture, produced 2 to 3 tons of biomass per acre this year.”

He said the almost 8 inches of rain that fell from Oct. 6-9 came too late to affect yields.

In addition to water levels, Xue said there was a noticeable difference among genotypes, adding, “you can visually see the differences in height and density. This will allow us to identify the best genotypes and traits related to drought tolerance and WUE in high biomass sorghum.”

With all the harvest completed and yields collected, the biomass will now be sent to College Station to Rooney’s lab for chemical composition analysis. This will help determine different environment-related quality traits for future use by breeders and geneticists to identify specific traits they want in the germplasm.

“We will have another year on this study, but what we are hoping to provide is management information for producers on a new crop option if biomass sorghum fits into their rotation system,” Xue said.
Cases of the turfgrass disease commonly identified as brown patch — more likely large patch in most warm-season turfgrasses — spiked during a cool September that broke rainfall records across parts of the state, according to specialists with the Texas A&M AgriLife Extension Service.

Large patch and brown patch are caused by different groups of Rhizoctonia solani, a fungal pathogen, said Dr. Becky Grubbs, AgriLife Extension turfgrass specialist in College Station. The group associated with brown patch in cool-season grasses follows a different life cycle from the one responsible for large patch in Texas’ most common warm-season grasses, including St. Augustine and zoysiagrass.

Diagnosis by a certified nursery professional or turfgrass specialist is the best option for accuracy, Grubbs said. Symptoms of large patch manifest in residential St. Augustine (top) and zoysia (bottom) under putting green conditions. (Texas A&M AgriLife photos)

Lesions also appear on infected grass sheaths and stems. “Our weather over the last month provided the disease with perfect conditions to proliferate this fall,” Grubbs said.

People who encounter emerging symptom patches in the lawn might instinctively seek a culprit among insect pests, said AgriLife Extension entomologist Molly Keck in San Antonio. “But an insect causing these symptoms is unlikely this time of year,” she said. “We know grub worms aren’t feeding as actively, and it’s too wet and cool to support chinch bug populations large enough for sufficient damage.”

And fall armyworms, whose populations also increased in September, cause damage by eating turfgrass leaves, while large and brown patch keep leaves intact as they rot.

**Treatment**

Grubbs said large patch and brown patch that materialize with cooler, wetter weather should clear up alongside those conditions, but a number of interventions can help revive affected areas that show no improvement with the weather:

— Shut off irrigation.
— Avoid mowing wet turfgrass.
— Remove objects causing excess shade.
— Aerate to improve drainage and air circulation.
— Order a soil test for deep insight on existing problems.
— Apply a fungicide as recommended by a specialist.
— Fertilize while turf is growing as directed by a soil test; reduce fertilizer in shaded areas.
— Discontinue nitrogen application at least six weeks before your area’s historic first frost.

Information on submitting a soil test is available at [http://soiltesting.tamu.edu/](http://soiltesting.tamu.edu/). A web post by Keck discussing large and brown patch issues for Bexar County is available at [http://bexarento.blogspot.com/](http://bexarento.blogspot.com/). The AgriLife Extension web publication How to Diagnose and Manage Large Patch Disease in Warm-season Turfgrass is available at [https://tinyurl.com/aggielargepatch](https://tinyurl.com/aggielargepatch).

**Symptoms**

Large patch appears in circular patches across the lawn with outer edges that are typically orange or yellow.
Drought, late summer rains among challenges for Texas cotton growers

By: Adam Russell

Drought and untimely late-summer rains likely will mean a subpar 2018 growing season for many Texas cotton producers, according to a Texas A&M AgriLife Extension Service expert.

Dr. Gaylon Morgan, AgriLife Extension statewide cotton specialist, College Station, said Texas cotton producers dealt with a myriad of challenges in 2018, including cool spring temperatures, summer drought and late-summer rains.

Three cold fronts early in the season put cotton fields behind and caused some poor emergence and considerable replanting, Morgan said. But summer sun and high temperatures provided enough heat units, and drought actually pushed cotton maturity to initiate harvest earlier than normal in South and East Texas this year.

However, much of the dryland cotton in many parts of the state was starved for moisture due to the dry summer, Morgan said. In South and East Texas, where dryland fields did survive, cotton yields were below average or not worth harvesting.

As the season progressed, hopes were renewed with scattered timely rains and plenty of heat units needed for cotton to develop in the Upper Gulf Coast, Morgan said.

“We got off to a rough start, but had a good looking crop in the Upper Gulf Coast before the rains set in in September,” he said. “Now there’s been a month off and on wet weather at the wrong time for the remaining cotton in the Upper Gulf Coast and irrigated cotton in the Blacklands.”

Morgan said fields in cotton-producing areas in the lower two-thirds of the state have received continuous rains and much of the Southeast and Coastal Bend is saturated, making accessing fields impossible. It’s the third year in a row that producers around the Upper Gulf Coast and Brazos Bottom regions have faced detrimental late-summer rains, including Hurricane Harvey last year.

In many of these areas, harvest is at a standstill, he said. Continuous rains are hurting fiber quality and seed quality in the field, and delays are causing problems such as cottonseed sprouting.

Morgan also said many producers in the rain-soaked parts of Texas had applied defoliant before rains set in and the delays will mean spending more money on harvest aids to bring remaining cotton in.

Harvest in the Rio Grande Valley was complete, Morgan said, and 95-98 percent of cotton in the Coastal Bend was out before the rains hindered producers. But this wet weather has also prevented destruction of post-harvest cotton stalks, which growers are required to do for continued success of the boll weevil eradication program.

In the Upper Gulf area, including Matagorda County, around 25-35 percent of the crop was still in fields, and 60-70 percent of fields in the Brazos Bottom were still awaiting harvest, he said.

Cotton fields in the Southern Plains and Panhandle should be ready for harvest toward the end of the month, he said. Most dryland cotton in the Southern Plains and Rolling Plains was lost to drought, and producers were beginning to apply harvest aids to early maturing fields.

“We’re looking at an average irrigated crop (in the Southern Plains and Panhandle) because of the heat and irrigation limitations with little to no precipitation all summer,” he said.

According to U.S. Department of Agriculture, 25 percent of the Texas cotton crop had been harvested, 5 percent ahead of the five-year average, Morgan said. The report also rated the statewide cotton crop at 6 percent excellent; 22 percent good; 34 percent fair; 28 percent poor and 10 percent very poor.

Morgan said areas that needed to dry out in South and East Texas received additional rain this past weekend, which means continued delays and reduced fiber quality. Cottonseed production typically covers ginning costs for producers, but sprouting seeds mean farmers will incur additional ginning costs on top of decreased fiber quality.

Two years ago, somewhat similar conditions and discounts reduced farmer harvest income by 8-10 cents per pound of fiber, Morgan said. However, the cotton remaining in the fields in South and East Texas will likely see lower fiber quality than two years ago, because the extended exposure to weathering.

“All the acres that needed to be harvested were delayed more,” he said. “Everything that remains in the field will get worse until they can get it out.”
Often producers planting cover crops are worried about moisture use, but more important is the longevity of the crop residue and its beneficial results, said a Texas A&M AgriLife Research scientist.

Dr. Paul DeLaune, an AgriLife Research environmental soil scientist at Vernon, said when he talks about the residue management of cover crops, one question he always gets concerns termination timing and the use of soil moisture by the cover crop.

Cover crops are designed to keep soil from blowing and improve soil quality. DeLaune has included Austrian winter field pea, hairy vetch, crimson clover, wheat, rye, turnips and radishes as cover crops in the various studies.

“We use neutron probes here to monitor soil moisture year-round, and yes, the cover crop does use soil moisture,” he said. “But one thing we’ve found is that soil moisture is quickly recharged and your crop is back to status quo if you get a rain between termination and the planting of your cotton.”

This information is based on eight different cover crop studies by AgriLife Research in the Rolling Plains where soil moisture is monitored throughout the year, some continuously since 2012, he said, discussing the studies at the recent Rolling Plains Summer Field Day in Chillicothe.

More important, he said, is the termination timing of that cover crop. In comparing two different termination timings utilizing a wheat cover crop, he said the duration of the residue is increased with the maturity of the wheat.

“I like to let it go ahead and mature out to about 50 percent heading or so, and then plant cotton four to six weeks after termination,” DeLaune said. “This year, we had to terminate a little earlier due to a drift issue — mid-March versus toward the end of April.

“What we determined is if you terminate too early, you’re not going to have lasting residue. The residue in a vegetative stage degrades very rapidly. If you can allow wheat to reach heading, you can see lasting residue for about 18 months.”

So for those producers who are working with a cover crop, his advice is to consider delaying termination timing to ensure it results in lasting residue.

https://www.youtube.com/watch?v=HpJCaBeRO1c&feature=youtu.be

“Your soil moisture will be replenished, especially if it is on irrigated cotton, and it will pay off in the long term to build up your soil organic matter in your system,” DeLaune said. “It will cover your soil and protect your soil much longer.

“Although soil organic matter is slow to build up in our environments, we have seen more immediate impacts off cover crops on soil physical properties such as soil strength and infiltration,” he said. “Within the Rolling Plains, we have not observed depleted soil moisture behind cover crops during wheat and cotton growing seasons in dryland cropping systems.”

DeLaune said he understands there is greater risk in dryland systems and drier environments moving further west. However, Dr. Katie Lewis, AgriLife Research soil scientist at Lubbock, has noted the same trends in irrigated cotton systems at Lamesa.

Both locations will continue to evaluate cover crops, he said.

Waiting to terminate a cover crop leaves lasting residue.
Texas grain producers faced a difficult 2018 as natural and market forces aligned against them, according to Texas A&M AgriLife Extension Service experts.

Yields were down for dryland acres of corn and sorghum while yields were better for irrigated fields, Schnell said. “Yields for dryland acres in most areas of the Coastal Bend, upper Gulf Coast, Central Texas to Dallas were worse than a typical year,” he said. “There were isolated fields that did well, but drought and high temperatures hit as plants were going into pollination and grain fill.”

The Texas High Plains accounts for about 40 percent of the state’s corn acres, and 60 percent of the overall statewide crop.

Sorghum fared a little better because it is more heat and drought tolerant, Schnell said. Farmers have also managed sugarcane aphids well with the use of aphid-tolerant varieties and due to vigilant monitoring of their fields.

Schnell said most grain fields outside of the High Plains were harvested before rain prevented farmers access to fields. While rain is welcomed in the Panhandle region, it will delay harvest of grain crops in that region for a bit.

Dr. Mark Welch, AgriLife Extension economist, College Station, said grain producers experienced a tough year both on the production side and at market in 2018.

Lower yields in dryland fields and a higher cost of irrigation compounded the financial impact to producers, and market conditions will likely worsen this season’s results, he said.

“It was a tough, tough season for grain production,” he said.

Sorghum prices were already low as trade disputes with China created more uncertainty, Welch said. “Up to 80 percent of all sorghum exports go to China, so that number went to zero for now,” he said. “As exports dropped off, other sectors came up, such as sorghum for food production, seed and industrial use, but again due to lower prices.”

Corn was not affected by China, but other factors contributed to poor market conditions for producers, he said. Texas cash sorghum and corn prices held up relative to the futures market in Chicago this season, likely because of tight local supplies.

“Texas corn producers took a real hit as they dealt with seasonal price dips and uncertainty in (the North American Free Trade Agreement), which was compounded by all-time record grain production in the Midwest,” Welch said. “It’s unclear what that production will mean, but it won’t help prices.”

Texas grain exports to Mexico and Canada appear to be more secure at this point in the NAFTA negotiations, but Welch said the most positive news for Texas grain producers is the possibility for a good soil moisture profile next spring.

“There hasn’t been much good news for grain producers this season,” he said. “But the rain we’ve been receiving is encouraging.”
Texas A&M AgriLife Extension Service forage sorghum trials west of Amarillo provide a side-by-side comparison of varieties for farmers trying to meet increasing silage needs in the High Plains.

With the expanding dairy industry, the demand for forage is increasing, said Dr. Jourdan Bell, AgriLife Extension agronomist in Amarillo. Bell spoke at a recent field day highlighting varietal performance as well as an update on sugarcane aphids. This is the 19th year for these trials.

These trials are important because the recent increase in demand for forage is occurring at the same time as a decline in water availability from the Ogallala Aquifer, Bell said.

Bell said she conducts her annual field day at harvest time because it allows producers to see how the hybrids are performing side-by-side. Producers have different objectives — some are primarily interested in tonnage, while others are more interested in forage quality.

“There’s a greater interest in forage sorghums because in general they take less water, depending on the maturity class,” Bell said.

She has 60 sorghum entries, including forages, grain sorghums and sorghum sudangrasses, in her 2018 trials. Two corn hybrids are also planted as a check, she said, because producers like to compare sorghum silage with corn silage in both yield and quality.

“It is important to include the corn because it allows us to compare production and yield from the same field environment,” Bell said. “Our data shows there are many cases where forage sorghum does meet or exceed that of corn.”

In high-input situations, she said, corn will outperform forage sorghum. But in the Southern Great Plains, few producers have the irrigation capacity to produce upper-end corn silage yields with limited precipitation.

The trials also include two long-term grain sorghum varieties as checks, she said, but she is also looking at the grain sorghums for their potential in silage.

“The discussion of sugarcane aphid control was continued at the field day by Dr. Ed Bynum, AgriLife Extension entomologist in Amarillo.

Bynum said few forage sorghums have tolerance to sugarcane aphids, so typically that is where the heaviest infestations occur. Initial management should include regularly scouting fields to see when the infestation starts.

“I think farmers should not wait to initiate controls,” Bynum said. “Sometimes they wait until the infestation gets too heavy. If you initiate the control at our threshold recommendations, it is early in the infestation and control is better.”

AgriLife Extension entomologists have advised the threshold for treatment of the sugarcane aphid in the High Plains is when:

- 20 percent of plants are infested with 50 or more aphids in both the pre-boot and boot stages.
- 30 percent infestation of plants in the flowering to milk stages with 50 or more aphids.
- 30 percent infestation with localized areas of heavy honeydew and established aphid colonies when plants are in soft dough and dough stages.
- During black layer, when heavy honeydew and established aphid colonies are present, treat only for preventing harvest problems.

For next year, Bynum said, he is advising producers, if it fits into their operation, to plant forage sorghum earlier. This will allow it to reach a later growth stage before the sugarcane aphid infestations begin, minimizing the damage by the pest.
More than 150 green industry professionals and enthusiasts converged in Dallas for a showcase tour of the latest Texas A&M AgriLife developments in resilient lawns, sports fields and landscapes.

The annual Texas A&M Turfgrass and Landscape Field Day is held in a different location each year by Texas A&M AgriLife Research, the Texas A&M AgriLife Extension Service, and Texas A&M University alongside a number of public and private event sponsors.

On display

The 2018 event featured presentations by 16 Texas A&M AgriLife researchers, professors and extension specialists. They reviewed the latest research and sustainable management practices for optimal turfgrass and landscape performance.

“It’s a valuable event for gaining current insights on producing better turfgrasses and where the market is headed,” said Dr. Ambika Chandra, AgriLife Research associate professor and lead turfgrass breeder in Dallas. “We showed our latest initiatives in breeding for high-performance varieties that use less water, fewer inputs and stand up to adverse climate conditions.”

Chandra held presentations on breeding for turfgrass with shade, cold and drought tolerance as well as large patch disease resistance. She guided visitors through research greenhouses and field plots at the Texas A&M AgriLife Research and Extension Center, Dallas.

“The turnout today reflects a high level of enthusiasm and support for this work,” said Dr. Lindsey Hoffman, AgriLife Extension turfgrass specialist in Dallas.

Hoffman, also lead field day organizer, took attendees through turfgrass evaluation field plots at the Dallas center. She discussed new zoysiagrass and St. Augustinegrass varieties under review by the National Turfgrass Evaluation Program, or NTEP.

Presentations & presenters

Other field day presentations covered disease diagnosis, landscape water efficiency, turfgrass health, insect pests, weed management, irrigation and fertilization. The field day agenda with information on each presentation is available at https://dallas.tamu.edu/.

“We were really able to bring together some of the leading experts in this field,” Hoffman said. “And our sponsors can take pride in a valuable contribution to healthier lawns and landscapes, and to healthier people as a result.”

A barbecue lunch and trade show featuring event sponsors rounded out the afternoon inside the new “water education building” — one of two new buildings on the reconstructed Dallas center campus.

Genome Editing Symposium

Photos and story by: Beth Ann Luedeker

Texas A&M University graduate students in the departments of soil and crop sciences and horticulture joined forces to organize and host a student-run Genome Editing Symposium in College Station.

They feel as though the inaugural event was a success, bringing together researchers, grad students and members of industry interested crop improvements. According to the students, roughly 170 people attended the conference, with another 20 tuning in to the webinar.

“We are very excited about the research presented at this symposium and the discussion these presentations generated,” said Karina Morales, one of the event organizers.

A student poster contest was held in conjunction with the symposium. Anna Casto Markosky, who is working on her doctorate degree in Molecular and Environmental Plant Sciences claimed first place with her poster on the regulation of sorghum stem aerenchyma during internode development. April Demell, a plant pathology and microbiology student, placed second, with Ranjita Thapa, a doctoral plant breeding student under Dr. Endang Setpiningsih, placing third.

Dr. Bing Yang, a researcher from the University of Missouri, discussed his research with CRISPR- and TALEN- based genome editing technologies to the large audience at the symposium.

Dr. Edward Carghill, who earned his Ph.D. at TAMU in 2004, leads a team of scientists working on plant transformations through genome editing.

The symposium offered students and researchers an opportunity to network and share ideas.

Left: Dr. Patrick Stover, Vice Chancellor and Dean of the College of Agriculture and Life Sciences at Texas A&M University, addressed symposium attendees. Below: Judges listen as Ph.D. student Hussam Alawadi presents his research poster on mapping QTL associated with aroma and other traits in rice.

April Demell, a grad students in Plant Pathology and Microbiology at TAMU, explains her poster to Soil and Crop Sciences professor Dr. Amir Ibrahim.

Student leaders of the Genome Editing Symposium: Karina Morales, Brendan Mormile, and Emily Boak.
Increasing levels of dietary fumonisin do not adversely affect feedlot cattle performance, according to a Texas A&M AgriLife Research scientist in Amarillo.

After a tumultuous 2017 corn season resulting in grain price discounts due to fumonisin, Dr. Jenny Jennings, AgriLife Research beef nutritionist in Amarillo, conducted a controlled beef cattle feeding study to determine the dangers of the mycotoxin in feed corn.

Fumonisin contamination in corn can be found around the world, said Dr. Jourdan Bell, Texas A&M AgriLife Extension Service agronomist in Amarillo. Yearly levels vary due to environmental conditions, hybrid susceptibility and management.

In 2017, fumonisin levels were elevated due to environmental conditions that favored fusarium infestation and fumonisin development in Texas High Plains’ corn, Bell said.

“Last year was an educational year,” Bell said. “It prompted regional research that will benefit both the corn producers and cattle feeders.”

With the majority of the Texas High Plains’ feed corn production going to the cattle feeding industry, Jennings’ study should have wide-reaching effects in both industries, she said. There are approximately 770,000 acres of corn grown in the High Plains and over 2 million cattle on feed in the region.

Bell said there were many unanswered questions about the guidance levels, testing procedures, discounts at the elevator and feeding within the beef industry.

“A local feeder approached me last year and asked if we could answer this question with science,” Jennings said. “I was amazed at how many entities came together and supported the research. Everyone just wanted answers.”

Both Jennings and Bell stressed this study does not change the implications of other livestock feeding regimes. But Jennings hopes her findings will contribute to updating the guidance levels for beef cattle.

The cattle used for the study were provided by a local feeder, and research funds were provided by AgriLife Research, local beef nutrition entities, ethanol producers, the Texas Cattle Feeders Association and Texas Corn Producers Board.

Jennings fed 49 steers a dry, rolled corn-based finishing diet. The rations were targeted to contain less than 5 parts per million total dietary fumonisin as a control, with other rates of 15, 30, 60 and 90 parts per million. The actual daily levels averaged 8.1 parts per million up to 108.8 parts per million because the corn fed was naturally infested with fumonisin, so levels varied.

The cattle were followed through harvesting and processing, where she monitored marbling score, rib eye, quality and yield grade, and livers were examined for abnormalities.

No difference in performance, carcass or liver characteristics were observed in steers fed dietary levels of fumonisin ranging from 8-108 parts per million for 110 days prior to harvest, Jennings said.

Her results were similar to a study done in 1993 that showed no difference in body weight, average daily gain or dry matter intake among calves fed three treatments of dietary fumonisin for 31 days, followed by 30 days on a control diet, Jennings said.

“The results of our study support the theory of reduced susceptibility of beef cattle to the effects of fumonisin and suggests that this reduced susceptibility may hold true for cattle fed to heavier final weights and for longer feeding periods, such as in a commercial feedlot setting,” Jennings said.
Three cotton researchers from throughout Africa have teamed up with Texas A&M Soil and Crop Sciences professors as part of the Borlaug International Agricultural Science and Technology Fellowship Program.

Dr. Gapili Naoura, Adama Ouattrata and Dr. Larbouga Bourgou will be working with Drs. Jane Dever, Jake Mowrer and David Stelly in College Station and Lubbock until they return to their home countries in late November.

The Aggie professors will each make a reciprocal visit to the home country of the Fellow with whom they are working to see how they are using practices and technologies learned while in Texas.

Funded through the USDA - Foreign Agriculture Service, the Fellows program is designed to promote food security and economic growth in developing and middle-income countries by providing training and collaborative research opportunities. Fellows are selected based on a variety of criteria, including their academic and professional research interests, level of scientific competence, aptitude for research, leadership potential and the likelihood of bringing new ideas back to their home institution.

Dr. Bourgou is a cotton breeder from Burkina Faso in western Africa, one of the highest cotton production countries in Africa. He works in cotton variety development, focused on earlier generation of seed multiplication for cotton companies there.

“I first met Dr. Bourgou during a visit to Burkina Faso in 2015 as a technical advisor to a USDA-FAS funded development project, “Revenue thorough Cotton Livelihood, Trade and Equity” (RECOLTE),” and was impressed with his passion for cotton breeding and enhancing genetic diversity in breeding populations for western Africa,” said Dever, a Professor at the TAMU AgriLife Research and Extension Center in Lubbock.

“I am delighted to be hosting him and working together to develop breeding gene pool populations to select new high quality cotton varieties adapted to African growing conditions,” Dever said.

Bourgou has personally assembled 350 locally collected accessions to conserve and rejuvenate genetic resources, and through the fellowship he will continue to characterize those accessions and evaluate how to best utilize them for cotton improvement.

Dr. Naoura is from Chad, a country in north-central Africa. He was a sorghum breeder until about two years ago, when he began working with cotton. He is now working to develop cotton varieties suited to production in Chad.

“We are trying to share knowledge about germplasm, germplasm resources, relatively cost-effective DNA extraction methods, hands-on experience with PCR-based SNP genotyping and more, all in the context of breeding,” said Stelly, a professor and cotton breeder in College Station.

“A part of the discussion is how SNP genotyping can be useful in Gapili’s breeding program and possibly adapted to other Chad crop programs,” he said.

Adama Ouattara is also from Burkina Faso, where he is a cotton production scientist.

He and Dr. Mowrer are studying the effect of potassium nutrition on water stress resistance in cotton. They have designed a greenhouse study to evaluate the effect of potassium fertilization on early plant growth under repeated cycles of imposed water stress.

“Our visitors are impressive and eager to learn more, which makes our job for training fun and relatively easy,” said Stelly. “Clearly the screening system that is used to identify trainees is very, very good.”
Former Students in the News....

Brian Ottis ‘99, global solutions development lead at RiceTec, recently showcased the company’s newest rice cropping solution at a field day in Missouri. An article about his work was featured in the Mid-America Farmer Grower. The full article can be read at: http://www.mafg.net/NewsDetail.aspx?NewsID=6341. Ottis earned both his Bachelor of Science (Plant and Environmental Soil Science -1999) and his Master’s (Agronomy - 2002) from TAMU. While at A&M he served as the President of the Agronomy Society and was active in the COALS Reps Network.

If you are attending the society meetings in Baltimore, please join us for the

Texas A&M University - Soil and Crop Sciences Mixer at ASA and CSSA
Tuesday, November 6 5:30 ~ 7:30 p.m.
at
Frank & Nic’s
511 W. Pratt Street
Baltimore, MD

Just a five minute walk down Pratt Street from the Baltimore Convention Center

Sympathy

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

The family of Dr. Dale Lovelace who passed away September 29. Dr. Lovelace was an Area Forage Specialist at the District 4 headquarters in Dallas at the time of his retirement in 1993.

The family of Dr. Khee Choon (K.C.) Rhee who passed away October 7. Dr. Rhee was a professor of soil and crop sciences, and food science and technology as well as the director of the Food Protein R&D Center at the time of his retirement in the mid 1990s.
October

17-18 - Borlaug Dialog International Symposium
19 - 3rd Annual Chili Cook-off Fundraiser to benefit the Brazos Valley Food Bank
23-25 - CAST annual meeting, Sacramento, CA
26 - Fall Harvest Bash - 6:00 p.m., Scotts Facility, College Station

November

4-8 - ASA and CSSA meetings - Baltimore, MD
5 - Rainwater harvesting workshop and Mill Creek Partnership meeting - Bellville
13 - Faculty Meeting 2:00 p.m.
20 - Departmental Thanksgiving Feast
22-23 - Thanksgiving Holidays
27 - Low impact development workshop - Irma Lewis Seguin Outdoor Learning Center
27-29 - Amarillo Farm and Ranch Show

December

1-4 - CSSP meeting - Washington D.C.
3 - Homeowner septic maintenance class - Bellville
4 - COALS Holiday Social - AgriLife Center
4-5 - Texas Plant Protection Assn. Meeting - Bryan, TX
11 - Texas Watershed Stewards workshop - Jonesboro, TX
14 - Graduation - College of Agriculture and Life Sciences - 2:00 p.m.
15 - 3 to 6 p.m. Baltensperger Christmas Open House

Save the Date

January 7-9 - 2019 AgriLife Conference, College Station
February 25 - March 1, 2019 - Turfgrass Ecology & Mgmt Short Course - College Station
April 11, 2019 - Department of Soil and Crop Sciences Awards Banquet - Hildebrand Equine Facility