AGgie Agenda

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July/August 2019
Congratulations to our summer graduates! Many of them are now ready to enter the agricultural workforce and have accepted positions. Others are choosing to continue their education – searching for their precise niche. We congratulate them all and wish them the best of luck.

Classes begin on August 26 for the fall semester and last minute preparations are being made for another great year!

Summer is a busy time for our science, and a time for our faculty to display their accomplishments at field days. While many field days are now behind us or wrapping up soon, plans for the fall are evolving rapidly.

In the past month, the Beef Cattle Short Course saw presentations from many of our faculty, and our turf team was instrumental in programming at the recent Texas Turfgrass Association Summer meetings. We had the opportunity to meet with many water scientists from around the country, as they were in town to visit with our faculty and participate in the Southern Regional Water Conference. Congratulations to Diane Boellstorff and team on a great conference.

The wheat workers will soon hold their annual meeting along with the Small Grains Advisory Group and the Soils Critique. Thanks to Dr. Peyton Smith and Dr. Julie Howe for hosting the soils critique. They are rapidly developing a strategic plan to build for the future.

Many of our Plant Breeding students and faculty will be participating in the National Association of Plant Breeders meeting in Georgia this month.

I recently had the opportunity to participate in the National Advisory Committee for Agricultural Research, Education, Extension and Economics (NAREEE). Discussions ranged from moving NIFA and ERS to Kansas City to issues with limited research and economic data on soil security, forages, turfgrass and floriculture. We had the opportunity to begin the process of selecting members for the various subcommittees of NAREEE, including National Genetic Resources Advisory Council, Citrus Disease, Specialty Crops, and Renewable Energy. This was a great opportunity to share concerns and opportunities with this new technology. This advisory committee will allow us to impact future USDA direction as I chair the committee for the next year. [https://nareeab.ree.usda.gov/](https://nareeab.ree.usda.gov/)

A big congratulations to all our faculty for a big push with grant writing this year. Several grants have recently been finalized and many are still in review. A few recent major awards include Dr. Muthu Bagavathiannan on organic systems, Drs. Joseph Awika and Bill Rooney for the USDA-SMIL phase II proposal, and Dr. Nithya Rajan for BNI sorghum. Many are anxiously awaiting decisions on their proposals.

The wheels have already begun turning for the upcoming school year. Officers from the TAMU Agronomy Society have planted the corn field for this fall’s corn maze and made repairs to the drip irrigation so the corn should do well. We hope things go well this year - with moderate rains - so our students can present a fun and successful education opportunity!

A Big Congratulations to Dr. Haly Neely, Dr. Clark Neely, Dr. Gaylon Morgan as they complete the move to their new careers this month. We are fortunate that we have already been given permission to recruit for replacing Dr. Cristine Morgan, Dr. Clark Neely and Dr. Gaylon Morgan. A special thanks to the Morgan’s and Neely’s for many years of dedicated service to the department.

We welcome John Cason, who joined us in Stephenville, and Dr. Aart Verhoeff and Dr. Alma Fernandez who are expected to arrive from Austria this month to bolster our efforts in sensor technology based on raman spectroscopy.

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/](http://soilcrop.tamu.edu/giving/)
Texas A&M researchers to develop climate-smart sorghum

By: Kay Ledbetter

Texas A&M researchers in the Department of Soil and Crop Sciences believe the development of climate-smart crops is the key to improving nitrogen-use efficiency and reducing fertilizer nitrogen loss in agricultural fields.

The crops would have the ability to suppress soil nitrification and have reduced nitrogen emissions, said Dr. Nithya Rajan, Texas A&M AgriLife Research crop physiologist and principal investigator in College Station.

Rajan initiated a project study, “Innovative Sorghum-Based Production Systems with Biological Nitrification Inhibition Property to Enhance Sustainability of Agroecosystems,” funded by a $500,000 grant through the Agriculture and Food Research Initiative – Foundational and Applied Science Program of the U.S. Department of Agriculture – National Institute for Food and Agriculture, USDA-NIFA.

She said nitrification and subsequent denitrification activities promote the loss of nitrogen from agricultural fields and largely is the underlying reason for low nitrogen-use efficiency in most field crops, including sorghum.

“Some plants can suppress nitrification by releasing inhibitors from their roots, a property known as biological nitrification inhibition (BNI),” Rajan said. “This will help with retention of nitrogen for longer periods of time to facilitate its uptake by crops and reduce the loss of nitrogen as nitrous oxide, a powerful greenhouse gas and ozone-depleting substance.”

Initial work supported by another USDA-NIFA exploratory grant involved screening for BNI properties of a range of diverse sorghum genotypes from the program of AgriLife Research sorghum breeder Dr. William Rooney.

This exploratory work was carried out in collaboration with Dr. Guntur Subbarao, principal scientist from the Japan International Research Center for Agricultural Sciences, JIRCAS, in Tsukuba, Japan. Subbarao is a pioneer and world-renowned BNI expert.

“We believe that BNI-enabled crops and production systems are part of innovative solutions for a genetic-mitigation strategy to address problems associated with nitrogen fertilizers in agriculture,” Subbarao said.

Subbarao leads a multi-institutional research group on BNI research in collaboration with several CGIAR institutes including the International Crops Research Institute for the Semi-Arid Tropics, ICRISAT, in Hyderabad, India.

“By collaborating with international institutions such as JIRCAS and ICRISAT that are at the forefront of developing this technology, we can bring innovative solutions to benefit U.S. agriculture,” Rajan said.

The current NIFA project is a collaborative effort by AgriLife Research, Texas A&M Engineering Experiment Station and JIRCAS.

Tackling the project with Rajan are the following Texas A&M researchers in College Station and their specialties: Drs. Sakiko Okumoto, plant physiologist; Ronnie Schnell, agronomist; Jacqueline Aitkenhead-Peterson, urban nutrient and water runoff; Kung-Hui Chu, environmental microbiology; John Jifon, plant physiologist; Muthu Bagavathiannan, weed scientist; as well as Rooney and Subbarao.

They will spend the next two years quantifying and characterizing the BNI compound secretion in sorghum, and evaluating the release of BNI compounds and nitrification inhibition in soils.

“The possibility of BNI in sorghum is exciting and has the potential to fundamentally change the way nitrogen is managed in the future for sorghum as well as other crops,” Schnell said.

“Improving nitrogen-use efficiency in grain crops will have substantial economic and environmental benefits for Texas and its farmers. However, there is a lot of research that needs to be done first to develop this technology.”

Beyond identifying elite sorghum cultivars with BNI properties, extensive field testing will be needed to develop cropping systems around this new technology, he said.

“The long-term goal of this program is to develop elite sorghum cultivars with enhanced BNI properties,” Rooney said. “Preliminary evidence indicates that variation exists among sorghum genotypes and it will be possible to improve this trait to have an impact in the future.”
New AgriLife Research peanut program leader in Stephenville

Dr. John Cason has been named Texas A&M AgriLife Research assistant professor for peanut breeding and genetics in Stephenville, where he will supervise the AgriLife Research and Extension Center’s peanut program.

Cason holds a doctorate from Texas A&M University in plant breeding, and he brings more than 20 years’ experience in breeding and developing new peanut cultivars. He supervised all phases of greenhouse- and field-level research at the Stephenville center during that time.

His research interests focus on development of peanut varieties with improved quality characteristics; identifying disease resistance and drought tolerance in wild peanut relatives and; developing introgression pathways to move genes into cultivated peanuts for development of varieties that are eventually used by growers in Texas and the Southwest.

“Cultivar development typically takes around seven years from first cross to release, so it’s a relatively slow process,” he said. “It can take up to 20 years to utilize wild species genetics to develop a new cultivar. We want to try to speed that up with the new technology that gives us the ability to collect and analyze large amounts of data. We’re just trying to shorten the process overall.”

One grant-funded program under his supervision will utilize aerial drones to collect field data, he said.

Cason also maintains and uses the wild species germplasm collection at the Stephenville center. Large amounts of the material were collected by his mentor, Dr. Charles Simpson, a professor emeritus at the Stephenville center, over many years in South America. It is one of the most extensive in the U.S. and includes germplasm from around the globe, he said.

“We’re following in Dr. Charles Simpson’s footsteps,” he said. “He’s still here full-time, and we’re grateful he has no plans to slow down.”

Cason’s responsibilities include wild species trait identification and introgression, cultivated population development, oversight of the statewide breeding trials, and coordination with the Texas Foundation Seed Service in initial seed increase of new and currently grown peanut varieties released from Texas A&M AgriLife. He will also collaborate with other scientists in the Texas A&M peanut program from across the state to develop new research and, most importantly, serve the growers of Texas.

“I will continue doing what I’ve been doing with expanded responsibilities, but it is exciting to see the peanut program flourishing once again,” he said. “It’s exciting that there is a commitment to the work we do and acknowledgement of the value of our research and how it benefits Texas and national producers and the consuming public.”
In Memory - Dr. Lloyd W. Rooney  
1939 - 2019

By: Kay Ledbetter

Dr. Lloyd Rooney, a Regents Professor and Faculty Fellow who retired in 2011 but remained on staff at the Texas A&M University department of soil and crop sciences as an emeritus professor, died on June 23.

Rooney retired after 46 years of service to Texas A&M and agriculture. His specialty was in the area of food science and technology, and he created the Texas A&M Cereal Quality Lab shortly after joining the department in 1965. His work included determining food and feed quality traits of sorghum, corn, wheat and pearl millet, as well as identifying special sorghums for use in ethnic and dietary foods.

“Dr. Rooney frequently told the story of how he came to the soil and crop sciences department and how colleagues kept asking him why he did not move to a food science department,” said Dr. David Baltensperger, head of the Texas A&M soil and crop sciences department, College Station. “His response was ‘because I can make a greater impact by working with breeders than by working with other food scientists.’”

“The impact of his work and the legacy of his students lives on from the world of tortillas to the many food products that now have a sorghum ingredient added,” Baltensperger said. “A great example comes from new sorghum ingredient cereals made possible by the release of Onyx sorghum by his son, Dr. Bill Rooney, with high antioxidant characteristics identified by Lloyd’s research. His knack for product development brought leaders from the snack food, cereal and tortilla industries to the department on a regular basis.”

Rooney spent a lifetime understanding mechanisms that influenced the quality of cereal grains and determining how process modifications affected a variety of products such as pretzels, tortilla chips, popped and puffed products and ready-to-eat cereals, as well as many other snack foods and processing techniques.

Sorghum was not the only cereal grain where Rooney’s work made a difference.

“It was Dr. Rooney’s concentrated effort of increased testing and quality monitoring at the Wheat Quality Lab that led to the improved baking and milling qualities in Texas wheat today,” said Dr. Jackie Rudd, Texas A&M AgriLife Research wheat breeder, Amarillo. “Twenty years ago, TAM wheat was known as being ‘adequate’ bread quality – now TAM wheat varieties are sought out by the milling and baking industry because of their superior bread-making quality.”

Rooney also initiated research in Mali that stimulated profitable food production from African grains, led research and hosted numerous workshops for the tortilla industry, as well as provided data on quality for numerous wheat cultivars.

Rooney was a member of the Texas A&M University Intercollegiate Faculty of Food. In 2007, he was awarded the Texas A&M Presidential Award of Excellence for Faculty Service to International Students and was inducted into the Mexican Academy of Science for his research on maize and mentoring of Mexican students.

Rooney served as a consultant to the U.S. Grains Council, International Crops Research Institute for the Semi-Arid Tropics, International Foundation for Science, University of Pretoria, Embrapa-Brazilian Agricultural Research Corporation, and the National Center of Agricultural and Forest Technology in Central America.

Editor’s Note:
If you would like to make a memorial gift you may use the following links:
Lloyd W. and Maxine Rooney Endowed Graduate Scholarship at the Texas A&M Foundation: https://www.txamfoundation.com/
Or to Hospice Brazos Valley at: https://www.hospicebrazosvalley.org
Growing industrial hemp in Texas is not yet legal in the state of Texas, but that doesn’t mean there is not a rapidly growing amount of interest, questions and calls. In response, Texas A&M AgriLife Extension Service has formed an Industrial Hemp Education Initiative Team to provide information concerning industrial hemp production in Texas.

“It is still not legal to grow hemp in Texas until several steps are taken,” said Dr. Larry Redmon, AgriLife Extension program leader and associate department head in Texas A&M University’s soil and crop sciences department, College Station.

Although House Bill 1325 has been signed into law by the Governor, Redmon said, it still requires the establishment of licenses, fees, criminal offenses and civil and administrative penalties.

The U.S. Department of Agriculture must finalize federal regulations and guidelines, followed by the Texas Department of Agriculture writing of state regulations and guidelines and getting them approved by the USDA. When all of that is done, potential growers will have to complete the licensing process before a single seed is planted, Redmon said. The licensing program will be established by TDA and requires producers to go through a background check and have a third-party crop testing to validate THC levels.

“We don’t know a timeline on all these steps being completed, but USDA anticipates its part to be done by the end of this year,” Redmon said.

Hemp, as outlined in the bill, refers to the plant Cannabis sativa L., including the seeds and all derivatives, extracts, cannabinoids, isomers, acids, salts and salts of isomers with a delta-9 tetrahydrocannabinol, THC, concentration of not more than 0.3 percent on a dry-weight basis.

Non-consumable hemp products include cloth, cordage, fiber, fuel, paint, paper, particleboard and plastics derived from hemp.

Once all the pieces are in place, AgriLife Extension’s industrial hemp education team will help develop resources for agents and specialists to utilize across the state in producer and public education programs.

Other AgriLife Extension members are agronomists Dr. Calvin Trostle, Lubbock, and Dr. Reagan Noland, San Angelo; regional program leaders Todd Swift, Uvalde, and Dr. Brent Batchelor, Stephenville; economists Dr. Joe Outlaw and George Knapek, College Station; communications, Kay Ledbetter, Amarillo; and county agents David Graf, Wichita; Bryan Davis, Wilson; Jason Ott, Nueces; Zach Wilcox, Nolan; and Megan Eikner, Potter.

Industrial hemp has been grown in most U.S. states, including Texas. In the 1930s, there was initial hemp production in South Texas. Though the Texas Rangers and TDA inspected and approved the production, in 1937 it was banned by the Texas governor.

In addition to educational programs, the future could include Texas A&M AgriLife initiating a limited research plan on industrial hemp as early as 2020, Redmon said. The primary objective would be to identify which approved varieties, those with 0.3% or less THC, perform best in regional adaptation and production of biomass/fiber, seed and oil yield under different Texas environments.
Alternative crops like sunflowers and sesame experienced a mixed year amid variable market conditions for the commodities that produce everything from oils to food products to viscosity enhancers used for oil well drilling.

Dr. Calvin Trostle, Texas A&M AgriLife Extension Service agronomist, Lubbock, said Texas producers planted fewer acres of the alternative crops in 2019 due to a variety of reasons from oversupply to the higher value of the U.S. dollar.

**SUNFLOWERS**

This year, Texas sunflower growers planted up to 40,000 acres, primarily in the High Plains, with about 8,000 acres in the Rio Grande Valley, Trostle said. Up to 30,000 of those acres were planted as oilseed, while a significant portion of acres were planted as bird feed.

Trostle said acres in South Texas have already been harvested, and good yields were reported. Sunflowers are planted later in the High Plains with harvests usually in October and November because they are cold hardy, tolerating temperatures as low as 28 degrees for a few hours.

Sunflowers are processed as birdseed or mixed with various millet and sorghum varieties to create a colorful blend that consumers and birds find appealing, Trostle said.

Trostle said the market for Texas confectionary sunflowers, those purchased to consume as a snack, had slowed due to record yields in the Dakotas and the strength of the U.S. dollar, which makes crops produced here more expensive overseas.

But there were almost 10,000 acres of confectionary sunflowers grown on contract, compared to zero acres in 2017 and 2018, he added.

“There are less (acres) than normal,” he said. “Oversupply has hurt prices and demand for planted acres.”

**SESAME**

Trostle said sesame, which is primarily used for food such as on hamburger buns, is having a better 2019 at market in comparison to last year. He said at least 50,000 acres were planted in Texas. Around 98% of the U.S. sesame crop is grown in Texas and southern Oklahoma.

A major contract buyer of sesame has continued to expand its operations over the past several years, he said. Texas producers have a technological advantage over producers around the globe via mechanical harvesting equipment to separate the seed from the pod with little yield loss.

“Anytime is a good time to add legumes like cowpeas to a crop rotation,” he said. “Black-eyed peas, purple-hull peas and beans could be a good option because there are a lot of individual buyers, plus there’s canning and sale for dried peas.”

**GUAR**

Guar experienced another tough year at market, he said. Low prices have continued since the market ballooned in 2013. Trostle said about 20,000 acres were planted this season.

“Import prices were below market and made it difficult,” he said. “Guar is used in food and cosmetics, but a lot of it is used in the oilfield, where they are just looking for the cheapest commodity price.”

**COWPEAS**

Trostle said one alternative crop – cowpeas, including black-eyed and purple-hull peas – has always been a good rotation option, and experienced a good market in 2019.

The nitrogen-fixing associated with legumes is good for soil health and can help future row crops like cotton, he said. They are typically planted in the first half of July, and he estimated around 25,000 acres of peas were planted in the High Plains alone.

“Anytime is a good time to add legumes like cowpeas to a crop rotation,” he said. “Black-eyed peas, purple-hull peas and beans could be a good option because there are a lot of individual buyers, plus there’s canning and sale for dried peas.”
Congratulations!

to each our students who received an advanced degree this month!
We are proud of you for the efforts you have made and wish each of you the very best in the next phase of your life!

Agronomy

Heather Baldi
Heather earned her Master of Science in agronomy under the supervision of Dr. Russell Jessup. Her thesis was focused on the characterization of novel torrefied biomass and biochar amendments.
Heather will remain here at Texas A&M to continue her work under Dr. Jessup as she pursues her Ph.D.

Henrique Da Ros Carvalho
Henrique received his Ph.D. in agronomy focused on environmental physics, specifically the energy balance of sorghum. His research was conducted under the supervision of Drs. James Heilman and Kevin McInnes.
Henrique is a native of Campinas, São Paulo, Brazil.
He is currently in the process of applying for positions.

Aaron Norris
Aaron earned his Ph.D. in agronomy under the supervision of Dr. Jamie Foster and Dr. Luis Tedeschi. His research focused on the plant/animal interactions, specifically their effect on energy efficiency and greenhouse gas emissions.
He is now interviewing for positions. He has offers on the table, but has yet to confirm since he has additional interviews upcoming.

Plant Breeding

Steven Anderson
Steve is receiving his Ph.D. in plant breeding. His research into the implementation of unmanned aerial systems as a high-throughput phenotyping tool was conducted under the supervision of Dr. Seth Murray.
He is currently interviewing for positions.
**Tyler Foster**

Tyler earned his Master of Science in agronomy under the supervision of Dr. Russell Jessup. His research focused on the development of novel perennial sorghum germplasm.

He will be pursuing a Ph.D. in plant breeding at Iowa State University.

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**David Horne**

David earned his Ph.D. in plant breeding with a focus on the use of genomic and phenomic tools for introgression of reinstated sorghum conversion germplasm. His research was conducted under the supervision of Dr. Bill Rooney.

He has accepted a position with Advanta Seeds in College Station, TX, working in the area of phenomics.

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**Yuya Liang**

Yuya Liang earned her Ph.D. in plant breeding with a focus on water related stresses in rice. She conducted her research was under the supervision of Dr. Endang Septiningsih.

She has accepted a postdoctoral position at the Michigan State University.

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**Fatma Betul Sade**

Fatma earned her Master of Science in plant breeding with a focus on wheat breeding. She conducted her research on genotype-by-floral traits interaction under the supervision of Dr. Amir Ibrahim.

She will be returning to Turkey, where she will be working as a wheat breeder in a state institution.

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**Xiaoqing Shen**

Xiaoqing earned her Master of Science in plant breeding under the supervision of Dr. Russell Jessup. She focused her research on machine learning, remote sensing and ground penetrating radar.

She will continue that research under Drs. Jessup and Jamie Foster as she pursues her Ph.D. in agronomy.
**Ranjita Thapa**
Ranjita earned her Ph.D. in plant breeding with a focus on abiotic stress tolerance in rice. She conducted her research under the supervision of Dr. Endang Septiningsih. She has accepted a position as a postdoctoral research associate at the University of Nebraska - Lincoln.

**Wenzhou Wu**
Wenzhou earned her Master of Science in Plant Breeding under the supervision of Dr. Steve Hague. She focused her research on the use of high-throughput phenotyping to improve efficiency of a cotton breeding system. She will be pursuing a doctoral degree in agronomy at the University of California-Davis.

**Soil Science**

**Brian Hux**
Brian earned his Master of Science in soil science with a focus on soil microbiology. He conducted his research under the supervision of Dr. Terry Gentry. He will continue working with Dr. Gentry as a lab technician, assisting with ongoing bacterial source tracking projects for river authorities throughout Texas watersheds.

**Catherine Kobylinski**
Catherine earned her Master of Science in soil science. She focused her research on ground penetrating radar and root phenotyping under the supervision of Dr. Haly Neely. She is looking forward to entering the workforce in the environmental consulting field.

**Kimberlyn Pace**
Kimberlyn earned her Master of Science in soil science under the supervision of Dr. Jake Mowrer. She focused her research on restoring cultivated soils in Uganda. She will be pursuing her Ph.D. in forestry at Mississippi State University.
Savanna Shelnutt

Savanna earned her Bachelor of Science in plant and environmental soil science with a minor in horticulture. When she came to Texas A&M from Granbury, TX, she was an animal science major, but by the end of her freshman year she knew it really wasn’t a good fit for her.

“In high school I was active in FFA and participated in range judging. Looking back, I realized how much I enjoyed working with plants and decided that the Department of Soil and Crop Sciences was a great fit for my interests,” Savanna said. “I have had so many wonderful opportunities ranging from working with the Agronomy Society to participating in undergraduate research.”

She has accepted a position at Hosmer Winery in Ovid, NY, where her duties will include general vineyard and winery work and analyzing the wine’s chemistry during the fermentation process.

Undergraduate wraps up internship

This summer, instead of going home and relaxing, Emily Bush chose to work as a student intern in the extension water programs. She spent ten weeks working with several AgriLife Extension program specialists in a variety of water-focused programs.

“I chose this internship because it is in extension and because I wanted to learn more about the water side of soil and crop sciences,” said Bush, a senior majoring in plant and environmental soil science in the Department of Soil and Crop Sciences at Texas A&M.

Bush helped with several programs, including Lone Star Healthy Streams, Healthy Lawns Healthy Waters, Texas Well Owner Network and others. She created handouts for the workshops, assisted with program advertisement through the creation of fliers and making cold calls to encourage attendance. She gained some public speaking experience by presenting at some of the programs.

“I was blown away by my experience this summer,” Bush said. “I am not sure what I expected, but this was more than I could have imagined. I always felt useful and helpful, and I learned something new almost every day.”

Bush grew up on her family’s farm near Riesel, TX, but had little experience with water-related issues. She admits that she learned things about water that she may never have been exposed to without this internship.

“Ms. Bush was the third intern to pass through our program and we have been pleased and impressed by what she has accomplished,” said Michael Kuitu, Extension Program Specialist /Program Coordinator in the water program.

“We aim to provide our interns with an immersive experience in the true work of Extension, both on the county and state levels, while helping them establish networking connections along the way,” he said.

The internship was originated by Dr. Jake Mowrer, Assistant Professor and Extension Specialist in soil nutrient and water resource management in 2017.

Emily will continue working with the Extension water program as a student worker until her graduation next May.
Everyone with a lawn has the opportunity to be an environmental steward.

This was part of the message presented at the recent Healthy Lawns Healthy Waters program at the Guadalupe Water Conservation District office in Seguin by John Smith, an AgriLife Extension program specialist focused on water quality, Reagan Hejl, a research associate in turfgrass science, and Ward Ling, an AgriLife Extension program specialist in watershed protection.

Turfgrass lawns are a resource that can help prevent soil erosion, dissipate heat, filter chemical pollutants, improve surface water quality and more, as well as enhancing your property value, Hejl, told those gathered for the program.

However, proper management of turfgrasses is important, he said. Improper management can lead to wasted water resources and pollution caused by displaced fertilizers and pesticides.

Hejl explained that good turfgrass management begins with site preparation.

“Plants are healthier, require less irrigation and tolerate stress better when they are grown in a deep and non-compacted soil, so good site preparation prior to planting is critical,” Hejl said. “Start with a pre-plant soil test to establish nutrient availability and identify future problems like salinity or pH issues.”

The soil test will also help determine which nutrients are needed, and helps prevent unnecessary fertilizer applications.

Hejl said it is important to know the strengths and weaknesses of the different turfgrasses. Some grow better in shade, others are more drought tolerant, some can handle foot traffic better than others.

“It is important for the homeowner to select the turfgrass that is best suited to meet their needs,” he said.

With many municipalities initiating water saving protocols for lawn irrigation, rainwater harvesting is becoming increasingly popular.

Smith provided an in-depth look at rainwater harvesting, the capture and storage of rainwater for later use.

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“This is a conservation practice that can reduce storm water runoff, and so reduce pollutants entering our water bodies,” Smith said. “And rainwater is better for lawns and landscaping as it is sodium free, zero hardness and a nearly neutral pH.”

Homeowners can collect the rain that runs off the roof of their house or other building, and stockpile that water until they need it for their lawn and landscaping, Smith explained.

“In the winter months, November thru February, the plants are dormant. The water from those months can be diverted to storage tanks and saved until the warm, dry summer months when the plants need it for growth,” he said.

Smith explained how to create a rainwater catchment and discussed the different tanks available for holding the water, filters which could be used, first flush diverters and more.

Ling provided an update on the Geronimo-Alligator Creeks watershed protection plan which is being implemented in the Seguin area.

The Healthy Lawns Healthy Waters programs are presented statewide. For more information contact John Smith at johnwsmith@tamu.edu
A relatively new pest – the Bermuda grass stem maggot – is plagues Texas hay producers this season, according to Texas A&M AgriLife Extension Service experts.

However, new research from Texas A&M AgriLife is helping growers better manage this pest.

“Previously, there was no information on how damaging this insect was to hay production and thus no guidelines on when an insecticide was needed to protect yields,” said Dr. Allen Knutson, AgriLife Extension entomologist, Dallas. “Our field research documented that for each percentage of stems with stem maggot damage, there is a potential loss of 8.9 pounds of hay per acre.”

Using data from fields in North Texas, Knutson and Dr. Forrest Mitchell, Texas A&M AgriLife Research entomologist, Stephenville, developed guidelines as to when an insecticide treatment is justified based on the cost of treatment and value of hay.

Dr. Vanessa Corriher-Olson, AgriLife Extension forage specialist, Overton, said she has received numerous phone calls and emails from producers and reports from AgriLife Extension agents in the region regarding the pest. She has also found them in hay and forage pastures at the Texas A&M AgriLife Research and Extension Center at Overton.

There was very little Bermuda grass stem maggot activity reported in the state last season, she said, but this appears to be a banner year for the pest.

“They’re definitely out there,” she said. “A few weeks ago, we had reports from Central Texas, but it’s not just there anymore. We can assume that if you have Bermuda grass in the state of Texas, you should be watching for signs of stem maggots.”

Feeding by the stem maggot causes the death of the top two to three leaves while the rest of the plant remains green. This gives a stand of Bermuda grass the appearance of frost damage. Also, the discolored top leaves are easily pulled from the leaf sheath, and plant growth is stunted.

“They’re typically not a major problem in grazing pastures because cattle are grazing those top leaves,” she said. “But they can cause serious damage in a hay meadow. The field will look like it’s been burned by frost, and stem maggot damage is often confused with a chemical burn.”

To use the new guidelines, it is necessary to estimate the level of stem maggot damage. To do this, Knutson advises cutting a handful of grass at the base of the stems and carefully examining 50 stems at random for stem maggot damage. Set aside those with the top two leaves dead and easily pulled from the sheath. Once 50 stems are examined, calculate the percent of damaged stems in the sample. Repeat this at five to 10 locations across the field and calculate the average percent of damaged stems for the field.

The new guidelines consider the cost of insecticide and the value of hay in determining when insecticide treatment is economically justified, Knutson said.

“For example, if the insecticide application cost is $12 per acre and the hay value is $140 per ton, the treatment threshold is 16% of the stems with stem maggot damage,” he said. “If the average field infestation is 16% or greater, an insecticide treatment should result in a positive economic return. If the control cost is $12 an acre, and hay value is $100 per ton, then the treatment threshold is 22% or more of the stems with stem maggot damage.”

In fields where stem maggot damage is already extensive, an insecticide treatment may not be sufficient to get the crop growing again, Knutson said, because damaged stems shade the lower nodes, preventing regrowth of new shoots. In this situation, the hay should be cut and removed as soon as possible to allow sunlight to stimulate regrowth.

A pyrethroid insecticide should be applied seven to 10 days after cutting to protect the regrowth from another stem maggot infestation.

“Weekly field inspection to determine the percent of stems with maggot damage can reduce the risk of significant yield loss and determine if and when insecticide treatment is justified,” Knutson said.

The Bermuda grass stem maggot is an invasive pest native to southern Asia and was first reported in Georgia in 2010. The pest has been found in Texas since 2012. This pest only infests Bermuda grass and stargrass, Corriher-Olson said. The fly, which is yellow with a black head, lays its eggs inside the Bermuda grass stem. After the egg hatches, the larva, or maggot, which is white with a black head and 1/8th to 3/16ths inch long, moves to the last plant node and begins consuming the plant material within the stem.

Guidelines on managing Bermuda grass stem maggots and the table of treatment thresholds for a range of control costs and hay values are available online at: https://foragefax.tamu.edu/.
Turfgrass programs coming in October

Two learning opportunities for those interested in turfgrasses and sports field management are coming up in October, the annual Texas A&M Turfgrass Field Day and The Tale of Two Playing Surfaces.

Turfgrass Field Day

The turfgrass field day will be held October 9 at the Scotts Miracle-Gro Lawn and Garden Research Facility in College Station.

“This field day offers turfgrass professionals and members of the public an opportunity to see and hear about the current research activities in the Texas A&M turfgrass program and related programs,” said Becky Grubbs-Bowling, assistant professor and AgriLife Extension turfgrass specialist.

Some of the related programs include soil science, pathology and entomology, according to organizers.

There will be CEUs available for those who hold a certified pesticide license from the Texas Department of Agriculture, and a trade show featuring a variety of products for the turfgrass industry.

Registration is open: https://agriliferegister.tamu.edu/organizationListings/72.

The cost is $55 until September 27, and $65 thereafter. Lunch is included.

For more information, contact Grubbs-Bowling at: b-grubbs@tamu.edu

Tale of Two Playing Surfaces

The Tale of Two Playing Surfaces is scheduled for October 16 at the Toyota Stadium - FC Dallas, in Frisco, Texas.

“This will be an interactive workshop where the participants will get to learn about different playing surfaces and how they impact player safety,” said Chrissie Segars, assistant professor and AgriLife Extension turfgrass specialist.

“Participants will hear about current trends and topics and have a hands-on opportunity to perform field tests,” she said.

Participants will learn about a brand-new synthetic surface that is being installed on the Texas Rangers field.

CEUs will be available for those who attend the entire day, including 0.625 for certified sports field managers and 0.5 for certified professional turf managers.

Registration is open: https://agriliferegister.tamu.edu/productListingDetails/2899

The cost is $20 per person, which includes breakfast, lunch and more.

For more information contact Segars at: chrissie.segars@ag.tamu.edu.

Left - Participants at the 2017 Turfgrass Field Day examine the plots in a shade study that was ongoing at that time.

Right - Dr. Ambika Chandra discusses current turfgrass research during the 2017 Turfgrass Field Day.

Above - Participants have the opportunity to get their hands in the turfgrasses during the 2017 Turfgrass field day.

Texas A&M AgriLife photos by Beth Ann Luedeker
Planted wheat acres were down in 2018-2019 in the Texas Panhandle, but it was still a learning year, according to experts with the Texas A&M AgriLife Extension Service and Texas A&M AgriLife Research. It offered a mixed bag of conditions with record wheat yields, waterlogged fields resulting in reduced yields and shriveled, low test weight grain and many fields were either hailed out or severely damaged by hail.

“Because it was an extreme production season for wheat farmers and across our variety trials, it was a very good year to evaluate wheat varieties,” said Dr. Jourdan Bell, AgriLife Extension agronomist, Amarillo. Each year Bell and Dr. Calvin Trostle, AgriLife Extension agronomist, Lubbock, join with Dr. Jackie Rudd, AgriLife Research wheat breeder, Amarillo, to provide wheat producers across the High Plains their “Top Picks” list for varieties with the highest potential before planting time.

The summaries are derived from wheat variety trials coordinated by the Texas A&M AgriLife wheat improvement program in Amarillo, with funding provided by variety trial entry fees as well as the Texas Wheat Producers Board.

2018-2019 PRODUCTION

“Across the Texas High Plains, much of the early wheat for grazing or dual-purpose production was drilled into good soil moisture,” Bell said. “This resulted in good stands and good early forage production.”

However, she said, the rain stopped at the end of fall, late wheat was sowed in dry, and winter drought resulted in many producers pulling cattle off dryland wheat pasture early due to a lack of forage. Late spring rain resulted in excellent recovery of the wheat, except in the eastern and northeastern Panhandle where rain and hailstorms resulted in significant waterlogging and hail injury to wheat fields.

In the western and southwestern Panhandle, cool conditions and ideal precipitation resulted in dryland yields approaching 80 bushels per acre on some fields; however, the regional average was approximately 40 bushels per acre. Irrigated wheat ranged from 70 to 100 bushels per acre depending on irrigation capacity and precipitation timing and amount. This region was also hit by scattered hailstorms that affected wheat on some fields, she said.

DETERMINING PICKS

“A Pick variety can be described as: Varieties that we would choose to include and emphasize on our farm for wheat grain production given the three-year performance and variety characteristics,” Trostle said.

Picks are not necessarily the numerical top yielders as end-use quality, important disease resistance traits – leaf or stripe rust resistance, wheat streak mosaic virus tolerance; insect tolerance – greenbugs, Russian wheat aphid, wheat curl mite, Hessian fly; or standability can also be important varietal traits that enable a producer to better manage potential risk, he said.

“Varieties placed on our Watch List show promise but have insufficient data, sometimes we only have two years available to make a conclusion,” Trostle said.

TOP PICKS

Picks for the Texas High Plains are based on yield performance and consistency over 34 multi-year, multi-site irrigated and dryland trials harvested from 2015-2019.

Full Irrigation Picks – TAM 113, TAM 114, Croplan CP7869, Syngenta SY Monument and Westbred Winterhawk.

Limited Irrigation Picks – TAM 112, TAM 113, TAM 114, CP7869, SY Monument and Westbred Winterhawk.

Dryland – TAM 112, TAM 113, TAM 114, CP7869, LCS Mint, WB4721 and T158.

Watch List – TAM 205 and TAM 115 to all three categories, and LongBranch to dryland.

Full wheat variety testing results for the High Plains are posted on [http://amarillo.tamu.edu](http://amarillo.tamu.edu); [http://lubbock.tamu.edu](http://lubbock.tamu.edu); and [http://varietytesting.tamu.edu](http://varietytesting.tamu.edu)
Texas A&M well represented at weed judging contest

By: Beth Ann Luedeker

Eight graduate students represented Texas A&M University at the National Weed Olympics in Seymour, IL, July 25th. They competed against students from across the United States in weed identification, herbicide symptomology identification, sprayer calibration/calibration math; and field problem solving.

Team A, which included Spencer Samuelson, James Griffin, Seth Abughro and Zach Howard, placed second in the southern region, besting all but Arkansas. Overall, they placed sixth out of 63 teams. All four are in the Department of Soil and Crop Sciences.

Team B includes Cynthia Sias, Mason House, Rohith Vulchi, soil and crop sciences, and Greg Wilson, entomology. They placed 8th among the 16 teams in the southern region and 34th overall.

James Griffin, a Ph.D. student under Dr. Gaylon Morgan, was the overall high point individual in the field problem solving, as well as the in the southern region.

The teams were coached by Muthu Bagavathiannan, Vijay Singh, Scott Nolte and Kathy Carson.

Corriher-Olson recognized for service

Vanessa Corriher-Olson was recognized recently for providing ten years of service to the Texas A&M AgriLife Extension Service.

She is an associate professor and AgriLife Extension Specialist in forages at the research and extension center in Overton.

“Vanessa has become the go-to resource person for forage production in Texas and across the southeastern U.S.,” said Dr. Larry Redmon, Department of Soil and Crop Sciences Associate Department Head and Extension Program Leader.

Stelly re-elected to Council for Principal Investigators

Dr. David Stelly, a cotton breeder and professor in the Department of Soil and Crop Sciences has been re-elected to serve as a council representative for the College of Agriculture and Life Sciences at Texas A&M. This will be his second term.

The council’s role is to enhance the research environment in order to optimize the success of principal investigators within the college.
Field Days and More!

Cotton Breeders Tour

Stiles Farm
Rainy conditions forced several of the presentations onto the bus!

Beaumont Rice Field Day
Former students making a difference

Jeffrey Van Meter has been named as an Assistant Principal at Cooper Junior High School in the Wylie Independent School District. Van Meter earned his Bachelor of Science in Agronomy from Texas A&M in 2009 and his Master of Science from Stephen F. Austin University.

Dr. Abdou Tenkouano is the new Executive Director of the West and Central African Council for agriculture research and development (CORAF / WECARD). Tenkouano earned his Master’s degree in plant breeding and his Ph.D. in genetics, both at Texas A&M. According to their website, CORAF is an international non-profit association that works in 23 countries in west and central Africa, covering 12.3 million square kilometers. They work in partnership with national agricultural research systems to improve the livelihoods of people in those regions through sustainable increases in agricultural production.

Distance plant breeding student at Beaumont

Chersty Harper is pursuing her Ph.D. in plant breeding through the Distance Plant Breeding program in the Department of Soil and Crop Sciences at Texas A&M University.

Chersty is conducting her research on abiotic stress interactions with rice genotypes at the Texas A&M AgriLife Research and Extension Center in Beaumont, TX, where she works as a research associate. Dr. Rodante Tabien, Associate Professor and rice breeder in Beaumont, is guiding her research. Dr. Steve Hague, Professor and cotton breeder in College Station, is her on-campus advisor.

Chersty is also pursuing a GIS certificate, which compliments her efforts with using drones to monitor plant health. She expects to graduate in the fall of 2020.

Concerns

Please keep Dr. Murray Milford in your thoughts and prayers. He is at home recovering from quadruple by-pass surgery.
Welcome to the world!

Madelyn LeeAnn Brown joined our Soil and Crop Sciences family on August 1. Both mom and baby are doing well. She weighed 7 lbs 11 oz and is 20 3/4 inches tall.

Madelyn is the third child of Matt Brown and his wife, Katie. Matt is a program specialist and Ph.D. student in the department.

“Big sister, Allie, and big brother, Connor, love her,” Matt said. “They keep arguing about who’s turn it is to hold her.”

Congratulations!

Texas A&M presence at the Wheat Congress

The first International Wheat Congress was held in Saskatoon, SK, Canada, July 21-26 and there was a strong presence from Texas A&M University and the Department of Soil and Crop Sciences.

AgriLife Research and the Department of Soil and Crop Sciences personnel at the Congress included: L to R: Shuyu Liu, Associate Professor in Amarillo; Shannon Baker, Research Associate in Amarillo; Joseph Awika, Professor in College Station; Amir Ibrahim, Professor in College Station; Audrey Girard, Associate Research Scientist in College Station; Ed Runge, Professor in College Station; and Jackie Rudd, Professor in Amarillo.

Audrey Girard and Anil Adhikari presented research posters at the Congress.

Audrey had the opportunity to explain her research to the Canadian Minister of Science and Sport, Kirsty Duncan.
August

16 - Winter Pasture - Stockpiled Forage Program  Contact: Vanessa Corriher Olson - vacorriher@ag.tamu.edu  
19-20 - Soils Critique, Scotts Turfgrass Facility, College Station  
21 - Small grains meeting, Silverton, TX  
26 - Fall semester begins  
27-29 - Nutrient Management Certification Training, College Station  https://agriliferegister.tamu.edu/Nutrient  
27-29 - Texas Wheat Producers Board Meeting - College Station  
28-29 - Small Grain Workers Meeting, Scotts Building - College Station  
29 - Small Grains Advisory Board meeting - College Station  
29 - Homeowner Septic System Maintenance Course - Brenham,TX  Contact: Ward Ling - wling@tamu.edu

September

4 - Bushland Forage Sorghum Silage Trial plot tour  
5 - Welcome Back Students!  Donut Social - 9:00 - 9:45 am - Heep Center, College Station  
17 - Texas Watershed Stewards, San Marcos, TX  Contact: Michael Kuitu - mkuitu@tamu.edu  
30 - Oct. 1 - Bennett Trust Women’s Conference, Fredericksburg

October

8 - Texas Watershed Stewards, Corpus Christi, TX  Contact: Michael Kuitu - mkuitu@tamu.edu  
9 - TAMU Turfgrass Field Day, College Station  Registration: https://agriliferegister.tamu.edu/turf  
16 - The Tale of Two Playing Surfaces, Frisco, TX  Contact: Chrissie Segars - chrissie.segars@ag.tamu.edu  
Registration is open: https://agriliferegister.tamu.edu/productListingDetails/2899  
21-25 - Ranch Management University, College Station  
Register at: https://agriliferegister.tamu.edu/productListingDetails/2805  
28-30 - Texas State Soil and Water Conservation Board Annual Meeting, San Antonio  
preregistration open now: https://www.tsswcb.texas.gov/annual-meeting-swcd-directors

Save the Date

Nov. 12 - Soil and Crop Sciences Mixer at ASA - Hard Rock Cafe, San Antonio 5:30-7:30  
Dec. 9-12 - American Seed Trade Association CSS (Corn,Sorghum, Soybean and Wheat), Chicago, IL  
https://www.betterseed.org/events/asta-css-seed-expo/  
Dec. 16-18 - Faculty Retreat - College Station  
January 8-10 - 2020 AgriLife Conference, College Station, TX  