TEXAS A&M AGRILIFE EXTENSION
Swisher County
310 W. Broadway
Tulia, TX 79088
806-995-3721
Fax 806-995-2364

Volume 15/ Issue 3

We're on the Web!
swisher.agrilife.org

Inside this issue:

Explore the Texas A&M AgriLIfe Extension bookstore at the following web address https://agrilifebookstore.org

John Villalba,
County Agent
Agriculture & Natural Resources.

Swisher County Farms to Meet World Needs?

How many times have you heard in the last year that farmers in the United States will be more than ever, expected to meet the needs of the growing world population? I can count at least 5 times that I have seen this topic on social media in the last month. It should certainly be pointed out that it is the truth, but how many of us have actually thought about that?

Last month, I attended the Texas International Cotton School in Lubbock. Although I was raised around cotton and have lived in the Panhandle the majority of my life, it was interesting to learn about segments of the industry that I had no idea about. I would be glad to summarize my experiences one on one with any of you at any time, but for now I'll just give you a couple of take away points to ponder:

First, we as collective agriculturalists on the Texas High Plains, are extremely blessed to be involved in the daily pursuits that we choose in this industry. EVERYONE around the world is looking to us and counting on us to develop practices and technologies which should make production increase. Sure, we struggle with pests, prices, and regulations, to name a few, but talk to someone in India sometime, and you'll quickly find that our situation is much better.

Second, as an employee of Texas A&M AgriLife Extension, it is my duty to fulfill our mission of serving the county producers' needs through education and information dissemination. I can honestly say that this career is great! However, even to some, I find myself explaining in a detailed fashion what it is, exactly that our agency does. In visiting with others from around the world, they are in awe that we have an organization which is in place to fulfill the needs of our clientele.

On this same note, they look to our research and data to make decisions in their situation, as well.

So, where am I going with this? I think we all take for granted what we do, how we do it, where we live, and what is available to us. Did you know that India is the 2nd largest producer of cotton in the world, yet 90% of all labor is manual? Think about that…

We are lucky to have a multitude of avenues around for us to be successful stewards of the land. Farmers in this area utilize the latest production technologies, and some even have a role in helping to develop these technologies.

One thing, though, that I feel is important to remember is what I alluded to just a few paragraphs back. The role that Texas A&M AgriLife Extension plays in this industry. Although with evolving times, there are numerous other players in the market, such as consultants, chemical companies, machinery businesses, and seed companies. The initial knowledge and research procedures that they use were developed by our agency many years ago. We now play a different role in some cases.

Without rambling on into a conversation here as to why our role has changed, I want to leave you with this: Although there are several different options for you to use to be more productive farmers, please don't lose sight of the one true thing you can count on. Texas A&M AgriLife can, through local and regional trials, research, and educational programs help you towards your desired goals. My new friends from around the world only wish they could attend one of our field days. They're thirsty for our knowledge. It's here, it's local, and I encourage you to continue to drink from our cup.

Upcoming Programs

Swisher County Sorghum & Corn Field Day
Thursday, September 3, 2015 9:00 a.m.
Meet at the Swisher Coop Gin
Cost: $10.00 3 CEU's
Lunch will be served at Jeremy Reed's Barn
Sponsored by Texas Corn Producers
Noon program will include Sugarcane Aphid Update and Spider Mite trial findings
Please call the Extension Office by Aug. 31 to RSVP

Beef Producer Supper
Tuesday, October 6, 2015 7:00 p.m.
Happy Community Center
Cost: $10.00
Topics include an El Nino meteorological forecast, winter supplementation ideas and the Veterinary Feed Directive ruling information
Please call the Extension Office by Sept. 28 to RSVP

Swisher County Cotton Tour
Thursday, October 8, 2015 9:00 a.m.
Cost: $10.00 3 CEU's
RSVP by Sept. 28
More information to follow

Bushland Sorghum Tour

Sorghum tour set for Sept. 9 near Bushland

Writer: Kay Ledbetter, 806-677-5608, skledbetter@ag.tamu.edu
Contact: Dr. Jourdan Bell, 806-677-5600, Jourdan.bell@ag.tamu.edu
Austin Voyles, 806-373-0713, Austin.Voyles@ag.tamu.edu

AMARILLO – The Texas A&M AgriLife Extension Service and Texas A&M AgriLife Research will jointly host a sorghum tour near Bushland on Sept. 9.

The program will begin at 9 a.m. and end around 11:30 a.m.

The first stop will be at the forage sorghum silage plots, where 100 hybrids can be viewed and will be discussed by Dr. Jourdan Bell, AgriLife Extension agronomist, Amarillo, and Dr. Ed Bynum, AgriLife Extension entomologist, Amarillo. Bell will discuss varietal characteristics, and Bynum will discuss management of sugarcane aphid in forage sorghum.

The tour will then move to the dryland sorghum plots, which include 28 varieties ranging from early to medium-long maturity classes. Bell and Bynum will be joined in the discussion by Austin Voyles, AgriLife Extension agriculture and natural resources agent for Potter County.

The final stop will be at the sorghum herbicide plots, with Bell leading the discussion.

To get to the first stop from Amarillo, travel west on U.S. Interstate 40 approximately 6 miles. Exit at Arnot Road and continue traveling west on the frontage road for 1 mile to Hill Road. The plots are located within the circle of sorghum silage on the west side of Hill Road.

Two Texas Department of Agriculture private pesticide applicator continuing education units will be offered – one integrated pest management and one general.

For additional information, call Bell at 806-677-5663 or Voyles at 806-373-0713.

Sugarcane Aphid Threshold Lowered for the Texas High Plains

Now that we have had at few weeks of experience with field-scale sugarcane aphid control in the southern High Plains, it appears that we need to move to a more conservative treatment threshold than the one currently in use. What we are finding in commercial fields and our insecticide trial is that our insecticides do not seem to be working quite as well as they do in more southern locations with higher humidity and less intense sunlight. Whether our environment affects the insects, plants and/or insecticides differently is unknown, and what we are seeing could be a combination of all three factors – or two or one or none, we just don't know. Insecticide coverage issues may also be in play. We could be experiencing insecticide interception by excessive honeydew such that some of the insecticide never gets to the leaf surface. We also do not know the importance of reduction in coverage and canopy penetration attributable to aerial application rather than ground application with higher volumes of water. Additionally, we also have reports of narrow row fields (less than 36 inches) having reduced insecticide efficacy, and this of course is a coverage issue.

The preceding paragraph is basically to say that we are not sure what is causing reduced control. We want to make it absolutely clear that there is no reason to think this is a resistance issue. However, with regard to application timing the prudent thing to do is to initiate insecticide applications sooner, before the aphids reach 50-125 aphids per leaf. For that reason we are recommending the action thresholds in use in Mississippi.

Growth Stage	Threshold
Pre-Boot	20% plants infested with localized area of heavy honeydew & established aphid colonies
Boot	20% plants infested with localized area of heavy honeydew & established aphid colonies
Midge Timing	30% plants infested with localized area of heavy honeydew & established aphid colonies
Soft Dough	30% plants infested with localized area of heavy honeydew & established aphid colonies
Dough	30% plants infested with localized area of heavy honeydew & established aphid colonies
Black Layer	Heavy honeydew and established aphid colonies in head *only treat to prevent harvest problems ** observe pre-harvest intervals

The threshold for soft dough stage sorghum is when 30% of the plants are infested and there are localized areas of heavy honeydew and established aphid colonies. This threshold would trigger significantly earlier insecticide applications than our Texas threshold of an average of 50–125 aphids per leaf. The full explanation of the Mississippi threshold can be found here: http://www.mississippi-crops.com/2015/02/24/management-guidelines-for-sugarcane-aphids-in-ms-grain-sorghum-2015/ . Note that this document estimates a 21% yield loss if fields at soft dough stage are left untreated after reaching the threshold. Missing an application at the boot stage threshold of 20% of plants infested with localized heavy honeydew and established aphid colonies would cause a 67% reduction in yield.

Of course another prudent step would be to increase the insecticide rate if possible. Bayer CropScience has some good recommendations for tank additives on the High Plains. Insecticide applications made at relatively low to normal numbers of aphids can be tank mixed with MSO/silicone blends. For heavier infestations they are recommending that Crop Oil Concentrate or High Surfactant Crop Oil be added at the recommended rates. The thought here is do drive the insecticide deeper in to the canopy.

Options in Cotton Irrigation Technology

Irrigation technology allows producers to apply adequate water to crops or grassland, without relying on annual rainfall. Though there are many different methods for irrigation, the center pivot and drip methods are the most commonly used in the Texas Panhandle. Here is some useful information regarding these two systems, to help you make better irrigation decisions.

Subsurface Drip

Subsurface drip irrigation uses lines below the surface to precisely deliver water directly to the root of plants. There are several advantages to drip irrigation including reduced soil erosion, higher yields, decreased input costs, and safer and more efficient ways to fertilize. Drip systems are also very useful on oddly shaped fields and fields with higher slopes. Where the drip tape is located depends on the type of crop the producer grows. For example, cotton planted on 40 inch rows will normally have drip tape located 80 inches apart while corn planted on 30 inch rows will have drip tape 60 inches apart. The biggest disadvantage is the expensive initial cost. A drip irrigation system could cost as low as $700 per acre or over $1,500 per acre depending on the design of the system. Depending on what crops you grow, drip systems usually pay for themselves over the span of a few years.

A well maintained drip system can last over 20 years. There are several steps to keep your system well maintained. First, you must maintain your filters. Many people choose to use a combination of filters in their drip irrigation system. Next, you must flush all of the lines and manifolds. Flushing prevents very fine particles from clogging the emitters. Lastly, you need to inject chlorine and acid. A low concentration of chlorine (1-5 ppm) kills bacteria and oxidizes iron, while a high concentration (100-1000 ppm) will oxidize organic matter and remove it from the system. Injecting acid prevents buildup of calcium carbonate, magnesium, and other salts.

Pivot Irrigation

With pivot irrigation, there are several different techniques you can use. The first is Low Energy Precision Application or LEPA. With a LEPA system, applicators are placed in every other row. These applicators use bubblers, drag hoses, or drag socks to deliver water directly to the furrow, thus, cutting down on evaporation. In fact, LEPA is 95% water efficient. Also, because LEPA is low energy, it requires low pressure of approximately 6 to 10 psi. Because the applicators follow the furrow, the farmer's crops under the pivot must be planted in a circle. Also, some areas are not suited for LEPA systems because the slope is too steep.

The next techniques for pivot irrigation are Low Elevation Spray Application (LESA), Low Pressure In Canopy (LPIC), and Mid Elevation Spray Application (MESA). These three systems are all low pressure sprinkler systems. Instead of using drag hoses, LESA, LPIC, and MESA utilize spray nozzles. The differences among these three techniques are how high the spray nozzles are located. LESA spray nozzles are typically located one to two feet above the surface, LPIC nozzles are located in the crop's canopy, and MESA nozzles are above the crops canopy, ranging from 5 to 10 feet above the surface. Because LESA systems are the closest to the soil surface, they lose the least amount of water through evaporation and wind. On the other hand, MESA systems lose the largest amount of water since they are the highest above the soil surface. For pivot irrigation, management should make sure the correct nozzles or applicators are always in use on the pivot. Failure to have the correct applicators can result in lower efficiency. Additionally, producers should grease swivels monthly and check gearboxes and center drives annually.

Source: TAWC, NRCS, Texas Corn Producers, Sorghum Checkoff

Irrigation Pumping Plant Efficiency Testing

This article is a few years old, but really has good information regarding how to determine pumping efficiency:

Most agricultural producers are using older diesel power units and old wells where upgrading to newer wells and diesel or electric motors need to be technically and economically evaluated. Over the summer of 2008, the radio and television were all abuzz with the record-high costs of gasoline and diesel fuel as well as the high cost of food in the United States and worldwide. These higher fuel costs dramatically increased the cost of irrigating crops in Louisiana.

Irrigators need a mechanism by which to evaluate the state of their pumping systems. With the current high diesel cost, this information is crucial in determining the profitability of switching to an electric motor or investigating in rebuilding existing diesel power plants. Additionally, producers need such analyses when applying for federal grant funds from RC&D or NRCS to assist them with electrical infrastructure or well replacements, respectively.

How is pumping efficiency determined?
A pumping system's efficiency is calculated by comparing the amount of fuel used with the amount of water pumped. This efficiency will change due to the depth of water being pulled from a well, the condition of an engine and the rate at which the motor is turning. The calculated performance is then compared with the performance of the motor under perfect, laboratory standards. Typically, electric pumping systems will have a 75-85% overall efficiency, and diesel-powered pumps will have between 18-35% efficiency, depending on the age and care of the engine.

To calculate a system's pumping efficiency, several pieces of information are needed. If this information is not able to be collected, assumptions can be made to estimate the efficiency. However, great care needs to be taken to make appropriate assumptions to prevent a gross over- or underestimation of the system's performance.

2009 Evaluations
In the spring of 2009, NRCS and extension specialists from Texas A&M University and the LSU AgCenter evaluated several diesel and electric pumping plants in southwest and northeast Louisiana. These tests were conducted toquantify the average operational costs and to evaluate if there is a need for further irrigation pumping-plant efficiency tests in Louisiana.

In southwest Louisiana, diesel-powered pumping systems on wells with water depths of 70-130 feet were found to have an average efficiency of 15.9 ± 0.02% with a 25% potential standard efficiency. The cost of irrigating an acre-inch, assuming $2/gallon for fuel, was found to be $2.93 ± $0.31 and an hourly cost of $11.51 ± $2.03 per pumping unit. Through proper operation, maintenance or replacement of system components, that can average $1.23 ± $0.28 per acre-inch irrigated or $9,258 ± $2,260 over a typical 2,000-hour pumping season. In a third of the units tested, nearly $16,000 per year could be saved through making appropriate changes to the farm's irrigation pumping systems. With the price fluctuations seen during the summer of 2008, the cost savings per pumping plant will only become more evident.

Electric pumping systems on wells were found to have an average efficiency of 40.1 ± 0.04% with a potential standard efficiency of 65.1 ± 0.01%. The cost of irrigating, assuming $0.06/kWh, was found to be $1.31 ± $0.13 per acre-inch irrigated and an hourly cost of $6.40 ± $1.05 per pumping unit. It is estimate that through proper operation, maintenance or replacement of system components, that can average $1.52 ± $0.14 per acre-inch irrigated or $5,144 ± $1,558 over a typical 2,000-hour pumping season.

Future Evaluations
With an average potential savings of over $9,000 per year for diesel pumping units, the need for pumping-plant efficiency testing is greatly needed, even at the cost of $2 per gallon for diesel fuel. The LSU AgCenter and NRCS are developing programs to conduct irrigation audits in Louisiana. It is hoped that statewide audits can be conducted for interested producers by spring 2010.

Source: LSU Ag Center, 2014

Top High Plains wheat variety 'Picks' offered by AgriLife Extension

AMARILLO – The "Picks for Texas High Plains Wheat" list for 2015 has been released by Texas A&M AgriLife Extension Service agronomists Dr. Jourdan Bell in Amarillo and Dr. Calvin Trostle in Lubbock.

"Wet weather in particular marked the return of good wheat production conditions in the Texas High Plains for 2014-2015," Bell said. "These welcomed conditions also fostered favorable conditions for rust diseases, in particular stripe rust."

A significant portion of High Plains acres were sprayed, and producers who did not spray, especially if they had susceptible varieties like TAM 111 and TAM 112, saw yields drop, she said. In contrast, some producers with TAM 113, which has stronger stripe rust tolerance, found that the level of tolerance was sufficient to preclude spraying.

Trostle said the Picks criteria includes a minimum of three years of data from at least 20 multi-year, multi-site Texas A&M AgriLife High Plains wheat variety trials.

"A Pick variety means this: Given the data, these are the varieties we would choose to include and emphasize on our farm for wheat grain production," he said.

He cautioned that the Picks are not necessarily the numerical top yielders, as important disease resistance traits such as leaf or stripe rust and wheat streak mosaic virus, tolerance to insects such as greenbugs and Russian wheat aphid or standability can also be important varietal traits that enable a producer to better manage potential risk.

"We look for consistency of yields, the regularity with which an individual variety is in the top 25 percent of yield at each location," Bell said.

She said in some previous years there have been no changes to the Picks list, but for 2015-2016 some deletions and additions were made.

"We have removed TAM 111 from full irrigation in part due to the troubles this variety experienced with stripe rust in 2015. This is the first year of significant underperformance for TAM 111 in our many years of trials, but stripe rust issues and moist conditions, which may be compounded in full irrigation, raise this caution."

Duster and Hatcher were also deleted. Though the long-term performance of these varieties has been solid overall as a Pick for all production conditions, their continued yield has become somewhat marginal relative to newer lines that are available, Bell said. Hatcher in particular has some risk due to longer maturity and the risk of poor performance at higher temperatures.

Trostle said the additions made include T158, a Limagrain product, for dryland and limited irrigation Texas High Plains wheat production. Part of T158's performance is tolerance to stripe rust.

"We also are adding a special note about TAM 114," he said. "We have good three-year yield data on TAM 114, formerly tested as TX07A001505, which has good across-the-board resistance to rusts, good straw strength, desirable milling and baking qualities, and also has intermediate resistance to some biotypes of Hessian fly. But the 2015 plantings are for seed increase, and are not likely to be available to producers."

Texas A&M AgriLife wheat grain variety Picks for the Texas High Plains based on yield performance and consistency from at least 20 multi-year, multi-site trials, 2010-2012 & 2014-2015.

Among the top Picks are:

– Full irrigation – TAM 113, TAM 304, Iba and Winterhawk.

– Limited irrigation – TAM 111, TAM 112, TAM 113, Iba, T158 and Winterhawk.

– Dryland – TAM 111, TAM 112, TAM 113, Iba, T158 and Winterhawk.

The two agronomists have also developed a two-year "watch list," which is based on 2014 and 2015 harvest data. It includes Gallagher, an Oklahoma State variety; SY Monument from Syngenta; and WB-Grainfield from Monsanto. All are showing good performance and will merit consideration after 2016 yield data is evaluated.

Gallagher had been in AgriLife trials up to 2013, but unfortunately was not tested in 2014, Trostle said.

"We need further analysis of 2015 harvest data or more data in 2016 to determine if either Byrd or Denali, both from Colorado State, may be advanced to our Picks list. And as noted, TAM 114 in essence has moved off our 'Watch List' but is limited due to little seed for 2015 planting."

Bell said these Pick varieties in general continue to yield an average of 8 to 12 percent better as a group than all other varieties in both irrigated and dryland tests.

However, Trostle said, the typical yield advantage did not materialize in some 2015 Pick lines like TAM 111 and TAM 112 because they had a down year due to stripe rust.

"Though you may have a variety for your production conditions that you really like, we encourage you to include one of our Picks in your cropping," Trostle said. "Perhaps a Pick variety that has a specific disease package, which may have been valuable in the stripe rust outbreak of 2015, or relative maturity that contrasts your current variety would be a good complement to your overall program."

For further discussion of wheat Pick varieties in the Texas High Plains, consult the "2015 Wheat Variety Trials Conducted in the Texas and New Mexico High Plains," available at http://bit.ly/1PjMAGL or http://lubbock.tamu.edu.

"We will have four-year data across multiple High Plains sites for both irrigated and dryland yield and test weight," Bell said.

For further details, contact Bell at 806-677-5600, Jourdan.bell@ag.tamu.edu, or Trostle at 806-723-8432, ctrostle@ag.tamu.edu.

SWISHER COUNTY
310 W. Broadway
Tulia, TX 79088

Using the Remind Program to stay up to date on Swisher County events:

1. **Text @623540 to (906) 762-4139**
2. **The system will then reply to your phone.**
3. **Simply reply back with your first and last name, and you're finished!**
4. **No one has access to your number.**
5. **Be "in the know" on all important Swisher County Ag events.**

The Quarterly Agricultural Newsletter

Is published by

Texas A&M AgriLife Extension, Swisher County

Swisher County Extension Office

310 W. Broadway

Tulia, Texas 79088

806-995-3721 Fax: 806-995-2364

swisher.agrilife.org

Follow us on:

Twitter: @SwisherExtANR

Facebook: Swisher County-Texas A&M AgriLife Extension