OFF THE BEATEN PATH

March, 2010

AGRICULTURAL NEWS FOR HALE COUNTY BROUGHT TO YOU BY TEXAS AGRILIFE EXTENSION SERVICE

Private Applicator Exam Training

Several individuals have contacted our office recently to inquire about the training course to prepare for the private applicator license exam. We will hold a training course at our office on March 25 beginning at 9:00 a.m. The cost is $25 and includes a training manual. Please call our office at 291.5267 and pre-register to ensure that we have an adequate number of manuals. After completing the training, individuals may take the exam at the TDA office in Lubbock. Exams are offered on the first and third Mondays of each month.

Wheat Management

We can generally expect wheat to be jointing in Hale County by the 10th of March, but this may occur later due to cold temperatures. As of March 11th I could not find any wheat jointing in Hale County. Jointing is defined as the stage when a node can be felt on the stem and stems lift up off the ground and stand upright. Producers who intend to top dress nitrogen should do so prior to jointing for maximum benefit. If you miss this target you will still benefit, but the number of seeds per spikelet is set around the time of jointing and this is the primary component of yield potential. With wheat prices at their current level any fertilizer applications should be well penciled decisions. For further information on topdressing N for wheat refer to the recent FOCUS on South Plains Agriculture newsletter at http://lubbock.tamu.edu/focus/focus_2010/Feb_23/Feb_23.pdf

Verticillium Wilt in Cotton

Last year in my travels around the county visiting with producers, one of the concerns that frequently arose with cotton production was Verticillium wilt. On one of my drives through the county I found visible symptoms in 50% of the fields I randomly checked. I'd like to take this opportunity to talk about this disease, management options and research that I participated in last year in Hale County.

Verticillium wilt is a vascular disease caused by the fungus *Verticillium dahliae*. It survives in the soil in the form of microsclerotia and can infect the plant at any time during the growing season. The pathogen enters the plant through the roots and begins to clog the xylem, or water conducting tissue, resulting in wilting and premature defoliation. Initial symptoms consist of light green or yellow streaks on the leaves and as the disease progresses a pattern of chlorotic (yellow) and necrotic (dead) streaks called 'tiger striping' will become visible. In severe cases, entire plants can defoliate. We normally do not see visual symptoms until August or September in most years. In some years, we do not see as much wilt as others and this is because the growth of the pathogen in the plant is influenced by temperature. It is only when average temperatures are at or below 78 degrees that the pathogen grows aggressively and symptoms flare up.

We all know that water stress in late summer will result in yield and quality losses. So, what can we do to minimize our losses? Soil fumigation is effective but not affordable. There are no seed treatments or fungicides available to control this pathogen. This leaves cultural practices and resistant cultivars. The literature states that if you have a severe infestation of the pathogen you should "avoid excessive irrigation and nitrogen applications". Now exactly what they mean by excessive I am not certain, but if you have a field severely infected you are applying water that the plant simply cannot take up and promoting the growth of the pathogen within the plant. We hope this will be an area of future research. Excessive nitrogen will delay maturity and this delay will expose plants to a larger window of optimal pathogen growth thereby increasing ones chances of experiencing losses. Work done by Jim Bordovsky, Wayne Keeling, Terry Wheeler, and Jason Woodward at the Helms research field at the Halfway Experiment Station has shown that a rotation with one year of sorghum and two years of cotton will result in lower densities of the fungus in the soil and less wilt, compared to growing continuous cotton. However, this rotation began before Verticillium wilt was a problem at the field. It may not work once the fungus has

built up in the soil. In 2010, this crop rotation work will be expanded to a one year cotton/one year sorghum rotation at the Helms field. However, there now exists a damaging level of the fungus in the soil in this area, so we will see how successful the rotation is in a field when it has a known Verticillium wilt problem. Work done by Dr. Wheeler and Dr. Woodward has shown that plant population can have an impact on this disease and the optimal drop rate is four seeds per foot. At two seeds per foot row, wilt was much more severe and yields and net return much lower than at four seeds. A rate of seven seed per foot was tested and gave a similar net return as four seed. Our best option is the use of partially resistant cultivars. Dr. Wheeler has been conducting tests to screen for varietal resistance and her results are published annually. The 2009 test results can be found at the following web address:

http://lubbock.tamu.edu/cotton/pdf/2009VERTICILLIUM.pdf

Dr. Wheeler rates the plots for incidence (presence/absence of the symptoms) and relates this data to yield. In other words she sorts the varieties from most to least return per acre and compares this with wilt incidence. Ideally, the top yielding varieties should have the lowest percent incidence relative to the lower yielding varieties. There are exceptions, such as Fibermax 9058F, which typically is a top yielder in these tests but often shows a high percentage of infected plants. Dr. Wheeler had observed that some varieties showed more or less 'melt down' or defoliation than others and believed that this might be having an impact on yield and quality. She asked if I would like to participate in her trial in Hale County and together we developed a defoliation rating scale which I used to rate the plots on Glenn Schur's farm on three different dates. Our ultimate goal was to find out if another rating method could provide a stronger correlation with yield and if we could identify a rating method and ideal date for breeders and pathologists to rate plots. To cut an already long story short, we found that in 2009 the ratings that correlated most strongly with yield were incidence ratings. Of course you cannot prove or disprove anything with one year of data so we will be continuing this experiment in 2010. To sum up the situation I will borrow a quote from Dr. Boman, "I don't have a solution, but I appreciate the problem." Dr. Woodward and Dr. Wheeler have produced an excellent management guide which can be found at:

http://lubbock.tamu.edu/cotton/pdf/IntegratedManagementVerticilliumWiltCotton.pdf

CRP Options

Thinking about breaking out your expired CRP? Don't be hasty. On the 27th of February U.S. Department of Agriculture Secretary Tom Vilsack made the announcement that there will be a general Conservation Reserve Program sign up later this year. I spoke to personnel at the Hale County FSA office and they stated that they have heard rumors that a general sign up will occur this fall, but they have nothing in writing at this time. In the event that renewal is not an option, Extension specialist Ted McCollum advises that many of our CRP grasses can produce good grazing when properly managed. Producers should certainly consider the total cost of breaking out CRP ground for crop production. These fields will also have poor nutrient levels. Extension economist Jackie Smith has done some excellent work looking at the cost of bringing these fields back into crop production. If you are interested in obtaining this information please call our office at 291.5267.

Wet, cold conditions and potential foot problems in grazing cattle

-Ted McCollum III, PhD, PAS-ACAN and Jason Osterstock, DVM, PhD
Texas AgriLife Research and Extension Center, Amarillo

The wet, cold conditions that have lingered since the Christmas holidays may lead to foot problems in grazing cattle in the Panhandle, South Plains, and Rolling Plains. Continuous exposure to wet conditions softens the hooves and skin between the hooves. As a result, the feet are more susceptible to mechanical injury and infectious agents that cause swelling and lameness and reduce performance.

Foot rot is one of the most common causes of lameness in cattle, but is also over-diagnosed in part because it is so common. Foot rot occurs in all ages of cattle. The first signs of foot rot are lameness and swelling between the hoof claws and evenly distributed around the hairline of the hooves. Accurate and timely diagnosis is critical to ensure positive treatment outcomes. If left untreated, foot rot can become chronic and infection may spread from the space between the hooves to deeper structures including bones and tendons, which is associated with a poor chance of recovery.

Several different bacteria that can commonly be found in the environment can cause foot rot. Weather can contribute to the ability of these bacteria to infect the foot in several ways. Prolonged exposure to wet conditions may lead to cracking of the skin between the claws, thus providing a route for bacteria to enter and infect the skin. Wet conditions also favor persistence of these bacteria in the

environment and on the surface of intact skin. Recurrent freeze-thaw cycles may also lead to frozen mud, which can create sharp points that traumatize the skin between the claws.

Foot rot is not the sole cause of lameness in wet conditions. Lameness may also be observed due to other infectious agents, mechanical injury due to softening of the hoof, or musculoskeletal injuries due to slippery or difficult conditions. Early diagnosis and treatment are key to recovery for all of these causes of lameness. Consult your large animal veterinarian for assistance with diagnosis and treatment programs.

Treatment and preventative measures for foot rot can include the use of injectable antibiotics and medicated feeds. Several products are available that are specifically labeled for the treatment of foot rot. In addition, your veterinarian can help make specific recommendations. Importantly, for some animals with more severe lameness, treatment with an anti-inflammatory may be necessary to aid in the control of pain and discomfort.

Prevention:

- Minimize time cattle stand in wet areas
- Put bedding on frozen or dried mud to reduce hoof damage
- Ensure adequate daily intake of mineral supplements, with special attention to zinc
- Provide medicated feed or minerals (check with your veterinarian for recommendations)
- Vaccinate against the infectious organism causing foot rot (check with your veterinarian; at this stage in the game, there may not be adequate time to develop immunity but a vaccination may help reduce severity of disease in subsequent outbreaks)

2010 Census

Once again it is time for the U.S. census. Now I'll be the first to say that I would prefer the government know as little about me as possible, but in this case federal funding is at stake and if we do not count everyone we could lose out on our share. For an area such as ours which does not contain a major metropolitan center this is even more critical. This funding is provided by our taxes so it is in our best interest to get as much back as possible. Participation is also required by law. Fortunately, everyone will receive the short form which contains only ten questions and should take no more than ten minutes to complete. Please help ensure that everyone is counted.

2009 Cotton RACE Trial Results

It was my privilege to assist Dr. Randy Boman, Dr. Mark Kelly and Mr. Chris Ashbrook with the RACE trial at the Halfway experiment station last year. RACE trials are replicated variety trials which allow the seed companies to decide exactly which varieties and how many they wish to place at a given location. During the year we collected data related to stand, NAWF, yield and quality. The following tables summarize this data. I recommend that producers also look at data from surrounding counties. A full report on this trial and Dr. Boman's other trials across the High Plains can be found at:
http://lubbock.tamu.edu/cotton/pdf/2009PCIPReportBookFinal.pdf

Table 1. Plant stand and NAWF results from the replicated LEPA irrigated RACE variety demonstration, Texas AgriLife Research Farm, Halfway, TX, 2009.

	Plant Population 18-Jun		Nodes Above White Flower (NAWF) for Week of				
Entry	**plants/row ft**	**plants/acre**	**27-Jul**	**3-Aug**	**10-Aug**	**17-Aug**	**25-Aug**
All-Tex Epic RF	**2.8**	**36,939**	**7.5**	**7.7**	**6.4**	**5.4**	**5.0**
Croplan Genetics 3220B2RF	**2.8**	**36,678**	**7.5**	**6.6**	**6.0**	**5.6**	**4.6**
Deltapine 0924B2RF	**2.1**	**27,181**	**7.4**	**7.3**	**5.9**	**4.9**	**5.2**
Dyna-Gro 2570B2RF	**2.5**	**33,193**	**7.8**	**7.6**	**6.4**	**6.3**	**4.6**
FiberMax 9160B2F	**3.0**	**39,814**	**6.3**	**6.2**	**5.1**	**4.4**	**4.1**
NexGen 3348B2RF	**2.9**	**37,287**	**6.8**	**5.9**	**4.9**	**4.8**	**2.8**
PhytoGen 375WRF	**3.0**	**39,553**	**7.0**	**6.6**	**6.6**	**6.3**	**3.8**
Stoneville 4288B2F	**2.5**	**32,496**	**7.3**	**6.3**	**4.6**	**4.4**	**4.1**
Test average	**2.7**	**35,393**	**7.2**	**6.8**	**5.7**	**5.3**	**4.3**
CV, %	**13.0**	**13.2**	**8.1**	**9.5**	**14.6**	**12.5**	**15.0**
OSL	**0.0751†**	**0.0711†**	**0.1358**	**0.0268**	**0.0658†**	**0.0121**	**0.0119**
LSD 0.05	**0.5**	**6,702**	**NS**	**1.1**	**1.20**	**1.2**	**1.1**

NAWF numbers represent an average of 10 plants per rep per variety for a total of 30 plants per variety.

CV - coefficient of variation, percent.

OSL - observed significance level, or probability of a greater F value.

LSD - least significant difference at the 0.05 level, †denotes significance at the 0.10 level, NS - not significant.

Table 2. Harvest results from the replicated LEPA irrigated RACE variety demonstration, Texas AgriLife Research Farm, Halfway, TX, 2009.

Entry	Lint turnout	Seed turnout	Bur cotton yield	Lint yield	Seed yield	Lint loan value	Lint value	Seed value	Total value	Ginning cost	Seed/technology cost	Net value
	-------- % --------		---------- lb/acre ---- ---------			$/lb	---------- $/acre ---------- ----------					
NexGen 3348B2RF	29.8	53.4	3504	1042	1869	0.4967	517.69	149.54	667.22	105.11	67.80	494.31 a
FiberMax 9160B2F	30.8	54.4	3190	982	1734	0.4968	487.84	138.75	626.59	95.70	69.14	461.76 ab
PhytoGen 375WRF	29.3	52.7	3338	979	1759	0.4805	470.24	140.75	610.99	100.15	67.33	443.52 b
Stoneville 4288B2F	28.2	54.4	3450	974	1877	0.4732	460.86	150.20	611.06	103.49	69.14	438.43 b
Dyna-Gro 2570B2RF	29.7	54.6	2891	859	1578	0.4947	425.00	126.28	551.27	86.73	67.35	397.18 c
All-Tex Epic RF	31.6	53.7	2819	891	1513	0.4615	411.08	121.04	532.12	84.58	56.49	391.04 c
Croplan Genetics 3220B2RF	27.2	53.9	3048	830	1642	0.4783	397.02	131.34	528.36	91.44	67.13	369.79 c
Deltapine 0924B2RF	29.3	55.3	2964	868	1639	0.4523	392.69	131.15	523.84	88.92	68.60	366.32 c
Test average	29.5	54.0	3151	928	1702	0.4793	445.30	136.13	581.43	94.52	66.62	420.29
CV, %	10.0	3.5	4.4	4.4	4.4	4.8	4.5	4.4	4.5	4.4	--	5.2
OSL	0.7119	0.7828	0.0001	0.0001	0.0002	0.2263	<0.0001	0.0002	<0.0001	0.0001	--	<0.0001
LSD	NS	NS	242	72	131	NS	34.96	10.45	45.39	7.25	--	38.15

For net value/acre, means within a column with the same letter are not significantly different at the 0.05 probability level.

CV - coefficient of variation.

OSL - observed significance level, or probability of a greater F value.

LSD - least significant difference at the 0.05 level, NS - not significant.

Note: some columns may not add up due to rounding error.

Assumes:

$3.00/cwt ginning cost.

$160/ton for seed.

Value for lint based on CCC loan value from grab samples and FBRI HVI results.

Table 3. HVI fiber property results from the replicated LEPA irrigated RACE variety demonstration, Texas AgriLife Research Farm, Halfway, TX, 2009.

Entry	Micronaire	Staple	Uniformity	Strength	Elongation	Leaf	Rd	+b	Color grade	
	units	32nds inches	%	g/tex	%	grade	reflectance	yellowness	color 1	color 2
All-Tex Epic RF	2.5	35.1	79.8	27.7	11.0	3.0	80.6	9.6	1.3	1.3
Croplan Genetics 3220B2RF	2.5	37.5	80.5	28.2	10.6	3.0	82.1	8.5	1.3	1.0
Deltapine 0924B2RF	2.5	36.0	80.6	28.2	11.4	4.3	80.2	9.2	1.0	1.0
Dyna-Gro 2570B2RF	2.8	35.0	79.1	27.6	11.1	2.3	81.3	9.0	1.3	1.0
FiberMax 9160B2F	2.5	38.7	82.5	31.0	9.4	2.7	82.4	7.9	2.0	1.0
NexGen 3348B2RF	2.8	36.9	82.1	30.8	10.7	3.7	80.5	8.4	2.0	1.0
PhytoGen 375WRF	2.6	36.4	80.4	27.3	10.4	3.3	80.9	8.3	2.0	1.0
Stoneville 4288B2F	2.6	36.4	79.8	27.6	10.6	3.3	80.0	9.5	1.3	1.0
Test average	2.6	36.5	80.6	28.5	10.6	3.2	81.0	8.8	1.5	1.0
CV, %	11.3	3.2	1.2	4.7	4.8	28.5	1.1	6.6	--	--
OSL	0.7559	0.0284	0.0093	0.0181	0.0095	0.2933	0.0312	0.03	--	--
LSD	NS	2.1	1.7	2.3	0.9	NS	1.5	1.0	--	--

CV - coefficient of variation.

OSL - observed significance level, or probability of a greater F value.

LSD - least significant difference at the 0.05 level, NS - not significant.

Scott Adair,
CEA-Ag/NR

Hale County Extension Service
225 Broadway, Suite 6
Plainview, Texas 79072

Tel. 806.291.5267
Fax 806.291.5266
asadair@ag.tamu.edu