FOCUS on South Plains Agriculture

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Editors' Note

We are nearing the end of our weekly publication regime for FOCUS on South Plains Agriculture. We sincerely hope that this newsletter has been a benefit to you this season. We anticipate that weekly publication will cease after the September 14th edition. Beyond that date, issues of FOCUS will be published on an "as needed" basis as crop production issues arise. FOCUS on South Plains Agriculture will resume weekly publication again in mid-April 2008. DLK & RPP

Cotton Insects

Cotton Aphids

Cotton aphids remain low in most areas, although they seem to be picking up in some isolated fields. They are still well below threshold but warrant close watching. We still have a lot of lady beetles and other beneficials in most fields and these appear to be keeping the aphids in check. However, we still need to monitor the aphids closely, especially in fields that still have lush tender growth and where we have treated for bollworms with pyrethroids or other broad-spectrum insecticides that may have taken out the beneficials. Remember that an insecticide application may be justified once that populations average 50 aphids per leaf; however, once we begin to see cracked bolls you might consider lowering that threshold substantially. When open bolls are present, some states recommend treating aphids when they average as little as 5-10 aphids per 5th main-stem node leaf. I can't emphasize enouth

the importance of keeping aphids out of cotton with open bolls. We cannot afford to have the High Plains cotton crop stigmatized as "sticky"; so keep an eye on these aphid populations. Even one field being designated as a "sticky' cotton producer could adversely affect growers for an entire gin.

Spider Mites

I've noticed light patches of spider mites from Lamesa north to Muleshoe and Plainview. For a more detailed description of spider mites in cotton, see last week's edition of FOCUS. Most populations are still very light, but there have been a number of fields where treatment has been warranted.

Spider mites are very small and are best observed under magnification. Their eggs appear as small translucent spheres that become "pinkish" before hatching.

Where most severe it is obvious that the outbreak of mites was the result of insecticide use targeting other pests; namely pyrethroids targeting bollworms or neonicotinoids (Centric, Trimax Pro or Intruder) targeting aphids. If you observe spider mites at moderate levels and need to treat for bollworms, you might seriously consider using something other than a pyrethroid for worm control. Products such as Steward, Tracer, or Denim would be good alternatives.

Similar to aphids, spider mite populations will often crash, usually due to predation by other mites, minute pirate bugs, thrips, or infection from mite killing fungi. I have observed a great many thrips feeding on spider mite eggs. Also, rain can do wonders for reducing mite populations, especially if accompanied by wind.

The current Texas Cooperative Extension recommendation for treating spider mites on cotton on the High Plains is to treat when the mites begin to cause noticeable damage. This is a pretty loose threshold and subject to a great deal of subjective judgment. On cotton with developing bolls, cotton producing areas that tend to have more problems with mites recommend treating when 30-50% of the 5th main stem node leaves show the presence of mites. I think that cotton at or near cutout can tolerate a higher infestation and mite control is generally not required once open bolls are present.

Based on the "Suggested Insecticides for Managing Cotton Insects in the High Plains, Rolling Plains and Trans Pecos Areas of Texas 2007" guide, products tested and recommend for control of spider mites include Zephyr, Dicofol/Kelthane, Methyl parathion, Curacron and Comite. However, there are a number of newer miticides that are not listed in the guide because they have not been evaluated for spider mite control in Texas. These include Acramite, Fujimite, Oberon, and Zeal. I have evaluated these products on twospotted spider mites or similar mite species in other crops in Arizona and found all of these to have good activity, although several of these may be a little slow acting. Oberon is a lipid synthesis inhibitor and is active against all life stages, but generally requires several days to see results. Zeal is a mite growth regulator affecting molting and is going to be active against the eggs and larvae; thus it may take at least 3 days to see results. The remaining miticides should be fairly quick acting and have activity primarily towards the adults and larvae.

When considering a miticide be cognizant of the coverage issue. If you need to treat for

mites, much like aphids, good coverage is essential. Apply the miticide by ground if possible and use at least 10 gallons of spray per acre; more if possible. If going out by air, do not use less than 5 gallons of spray per acre. Remember, these mites are on the underside of the leaves and getting the miticide to them can be difficult; especially for miticides that are not translaminar. Translaminar pesticides are those that are absorbed by the leaf and if contact to the top of the leave is made then it will move through the leaf and affect mites feeding on the underside. Miticides that are translaminar include: Zephyr, Oberon and Zeal. Additionally, the inclusion of COC or a non-ionic surfactant will enhance control of most miticides.

Lygus

Lygus have been picking up in number is some areas. At this time we are not concerned with square loss, but with damage to the soft bolls. Once a boll has accumulated 350 HUs from flower, it should be safe from *Lygus* damage. Based on long-term averages, a crop that reached cutout on Aug 1, Aug 10 and Aug 20 would be safe from *Lygus* damage on Aug 19, Aug 28 and Sept 11, respectively. Thus the cotton we are primarily concerned with at this point is the later cotton.

Deciding when to treat *Lygus* in late cotton is a difficult, and currently we do not have much information on which to base a decision. However, try to base your decision on *Lygus* counts along with the appearance of damaged bolls. If you are picking up 15-20 *Lygus* per 100 sweeps (sweep net), or 2-3 *Lygus* per 3 ft-row (drop cloth), or 12-15 *Lygus* per 100 plants (visual inspection), and *Lygus* damaged bolls are common, then you may consider treating. Keep in mind that these thresholds are only educated guesses and that we currently have little data to support them.

Cotton Bollworms

Over the past week, bollworm numbers have declined in most areas, although there have been incidences where fields have required treatment. For the most part they are a chronic problem where we can find 2,000 bollworms per acre fairly constantly, yet they do not exceed the threshold. Bollworms need to be scouted for carefully; inspect the terminals, squares, white and pink bloom, bloom tags, and bolls as well. Essentially, to really find all the worms on a plant, you have to do a whole plant inspection. This is especially important on Bollgard I varieties where the Bt titer tends to be lower in the blooms and worms feeding on these may sneak by. Treatment for may be justified when counts average 10,000 or more small (1/4 inch or less) larvae per acre, or 5,000 larger larvae per acre. Once a boll has accumulated 450 HUs from flower, it should be safe from any new bollworm egg lays. Based on long-term averages, a crop that reached cutout on Aug 1, Aug 10 and Aug 20 would be safe from a new bollworm egg lay on Aug 23, Sept 3 and Sept 21 respectively. DLK

Cotton Pests Around the State

Rolling Plains (reported by Ed Bynum, IPM Agent, Jones, Mitchell, Nolan, and Scurry counties)

At the end of last week, there was an egg lay of bollworms in cotton and small larvae are being found this week. I have scouted fields with both Bollgard II and Bollgard cotton varieties and I have not seen any significant caterpillar numbers or damage. Although cotton aphids were crashing last week due to predators, parasites, and the heavy rain fall, aphid numbers are beginning to come back in some fields. Keep in mind applications of pyrethroids for bollworms can flare aphid populations. Fall armyworms are still present in both cotton and grain sorghum heads.

Southern Rolling Plains (reported by Richard Minzenmayer, IPM Agent, Runnels and Tom Green counties)

Cotton has really progressed the past two

weeks and most fields are well into physiological cut-out. Larval counts are very low as is the bollworm egg counts. Cotton fields which achieved cut-out (NAWF=4) on August 20th should be safe from worm damage around September 12-14. We are currently accumulating 18-19 HU's per day and, if current weather pattern's stay on track, cotton harvest could begin around October 15 in some fields.

Cotton Agronomy

Crop Progress

The cotton crop continues to progress across the region. Over the last couple of weeks, some areas have again obtained some rainfall, with very significant amounts on some fields. Some producers have received enough rainfall to shut down wells in some fields depending upon the situation.

Heat unit accumulation was outstanding for the month of August, as we ended up with about 12% above normal for the month without any oppressive heat, click here to view August temperatures. Both high and low temperatures have generally been above average. This is good news for a lot of our late cotton. We are now 9% below the long-term average for heat unit accumulation at Lubbock for a May 1 planting date, click here to view 2006 heat unit accumulation, and here to view 2004-06 heat unit accumulations. I have a lot of crop tours and harvest aid meetings over the next 4 weeks and will be seeing a lot of High Plains cotton. I think we have another cliff hanger this year.

Countdown After Cutout

Many fields are late this year due to later planting dates and a cooler growing season than what we've had for some time. Some fields have recently reached cutout (here defined as Nodes Above White Flower or NAWF=5 on a steep decline). COTMAN uses 850 heat units past bloom as a point at which a bloom can make a "normal" boll. In the High Plains, heat unit accumulations of 750 past bloom will probably make an "acceptable boll" that may not have "normal" lint production and may be lower quality (low micronaire).

We have developed a table that indicates where we are as of August 29 (Table 1, click here to view table). It is based on actual Lubbock 2007 heat units from August 1, and August 10, and August 20 and from that point forward, it uses "temperature normals" (30-year long-term average) as projections for each day.

For example, the table shows that for a field that reached cutout on August 10, that bloom was able to obtain 350 heat units (probably safe from *Lygus*) by about August 28. For the 450 total (probably safe from a bollworm egg lay), should occur around September 3. If we encounter "normal" heat units from August 29 forward, this boll should obtain good maturity (850 heat units) about October 20.

Based on some irrigation termination projects with COTMAN when using center pivot irrigation (see below), the possible irrigation termination date could occur sometime around September 7. One can tell that unless we have an outstanding fall, the cotton blooms on August 20th at Lubbock will encounter difficulty in making a "mature boll."

Late-Season Irrigation Issues

The 2007 growing season has resulted in reduced irrigation expense for many producers. Some fields are now entering cutout. Normally a boll will be retained once it reaches 10-14 days after bloom. We would like to target the soil profile to be nearly depleted as we enter harvest aid season. One should keep the field with reduced stress at least until the final bloom to be taken to the gin becomes about a 10-14 day old boll. This will reduce the likelihood of small bolls shedding due to water stress. After that, late bolls can handle considerable stress. For a boll set on August 10th, it is apparent that the field should have re-

duced amounts of water stress probably at least through the end of the month, unless rainfall is obtained to offset center pivot irrigation.

A rod probe or other tool may be useful in determining the amount of moisture remaining in profiles in fields. Water holding capacities of major High Plains soils are found in Table 2, click here to view table.

When using the COTMAN program developed by the University of Arkansas, various investigators across the Cotton Belt have noted that irrigation termination at about 500-600 DD60 heat units past cutout (here defined as Nodes Above White Flower or NAWF = 5 on a steep decline) has been reasonable. One low-yielding trial (about a bale/acre) conducted by IPM agents Tommy Doederlein and Brant Baugh at the AG-CARES facility at Lamesa in 2003 indicated 600 DD60s optimized yield and net returns from irrigation. Most of these project reports published in the Beltwide Cotton Conference Proceedings lacked information on soil profile moisture status in the trials at the time the irrigation was terminated. **I suggest producers use this as a guide, not as the gospel.** With center pivots, low amounts of irrigation can be applied if the cotton is severely stressed after initial termination. Some fields which have missed some of the recent rainfall may wilt soon once irrigation is interrupted. If the amount of wilting is unsuitable for the boll load, then the pivot can be passed over the field to apply an additional increment of water.

As we move into the boll opening growth stage of cotton, the crop coefficient decreases from about 1.0 at first open boll to about 0.8 at 30 percent open bolls and decreases rapidly after that. That implies that once we get to the boll opening phase, if reference ET is averaging 0.25 inches per day, the crop will use about 1.4 inches per week (0.25 x 0.8 x 7 days). For information on the amount of irrigation available/week for varying irrigation capacities provided by Jim Bordovsky, TAES Irrigation Engineer (Table 3, click here to view table).

The value of continued center pivot irrigation after bolls begin to open is probably questionable, unless record high temperatures and high reference ET are encountered and the field has a depleted moisture profile and a late boll load. Generally, we observe about 2-5 percent boll opening per day once bolls begin to open. This implies that if the last irrigation is made at a few percent open bolls, then it should take about 10 days to reach 30-60 percent open bolls.

2007 Harvest Aid-Guide

We are now working on getting the High Plains and Northern Rolling Plains Cotton Harvest-Aid Guide updated. This will be posted on the Lubbock Center Web site when it becomes available, hopefully early next week.

Since we will have many fields moving rapidly toward maturity, questions will soon be forthcoming concerning harvest aid materials. We have some new harvest-aid products in the market in 2006. One includes Blizzard from Chemtura. Blizzard is a PPO inhibitor material and is in the same family with products such as ET, Aim, and Resource (which was new in 2006). Dr. Wayne Keeling and Dr. Mark Kelley conducted research trials with Blizzard in the High Plains for the past several years. The product seemed to perform similarly to others in the PPO inhibitor chemistry in those years. In some years, Aim and ET when applied at higher rates works well to desiccate juvenile growth and regrowth, which is many times difficult to accomplish with paraquat.

We expect Blizzard to perform similarly based on small plot testing conducted over the last several years. Don't forget to include crop oil concentrate (COC) with these products. Check the product labels and determine the appropriate COC rate to include.

We received notification on September 14, 2006 that Chemtura Corporation received EPA registration for a 3-lb/gallon paraquat formulation. This was received after the 2006 High Plains and Northern Rolling Plains Cotton

Harvest-Aid Guide was updated. This formulation contains the same amount of paraquat active ingredient per gallon as the old Gramoxone Max. Firestorm currently has a maximum use rate of 21 oz/acre per acre. We will be working with Firestorm this year to acquire necessary data to obtain a 24(c) Special Local Needs (SLN) label for stripper harvested cotton in most counties in Texas, hopefully for the 2008 season.

Gramoxone Max is now out of the market and Gramoxone Inteon has replaced it. Paraquat is the active ingredient in both formulations. The most important change noted is the in pounds of active ingredient per gallon. Gramoxone Max was a 3 lb/gallon formulation, whereas the Gramoxone Inteon is 2 lb/gallon. The Gramoxone Inteon is much more "applicator friendly" formulation. Since we have become accustomed to the higher 3 lb/gallon formulation of Gramoxone Max, we need to carefully scrutinize the rates of Gramoxone Inteon. We have generated a conversion table (Table 4, click here to view table) that provides equivalent active ingredient rates in lb/acre for Gramoxone Inteon and Firestorm (see below). We have a 24(c) Special Local Needs (SLN) label for the Gramoxone Inteon formulation from the Texas Department of Agriculture (TDA). This SLN has approved higher use rates for desiccation of stripper harvested cotton in most counties in Texas.

Applications of paraquat based products made in the late afternoon prior to a bright, sunny, day appear to enhance the effectiveness of desiccation and tend to increase control of juvenile growth (regrowth). Use of a non-ionic surfactant (NIS) at the rate of 0.5% volume/volume (v/v) with paraquat is suggested. It may be necessary to increase the NIS rate to 1% v/v and spray late in the day to effectively desiccate some fields if extensive regrowth is problematic.

Several harvest-aid trials are planned at this time. Dr. Mark Kelley will be working to establish these trials as soon as the crop reaches adequate maturity.

Yield Estimation

Although a very risky endeavor, I have had a few calls concerning how to estimate cotton yields. There is a TCE publication which deals with this issue, click here to view this document. This publication takes a fairly simple approach and is "user friendly." For a more complicated and thorough treatment of the subject, click here to see an older publication generated by Dr. Will McCarty, former Extension cotton specialist from Mississippi State University. I obtained this from a MSU Web site a few years ago. This publication considers many more factors such as numerous row spacings, boll sizes, and two estimated lint percentage levels (35% and 38% picked lint percentages of the SEEDCOTTON). Dr. John Gannaway's Cotton Performance Tests publication available on the Lubbock Center Web site, click here to see several years of reports. In his tests one can find boll sizes and picked lint percentages for numerous varieties. In spite of considering more factors, yield estimation should be approached with trepidation.

Basically it indicates that it takes about 155,700 normal (High Plains average of 4.0 g seedcotton/boll = 1.4 g lint assuming a lint percent for seedcotton of 35%) bolls are required to produce a 480-lb bale of cotton. This is equivalent to about 325 bolls per lb of lint. For 40-inch rows this calculates to 11.9 bolls per row-ft for a one bale/acre yield (155,700 bolls/13,068 row-ft per acre for 40-inch rows). This is very close to the "one boll per inch = one bale per acre" number that many crop watchers use to estimate yields in 40-inch rows. For 30-inch rows this works out to 8.9 bolls per row-ft for a one bale/acre yield (155,700 bolls/17,424 row-ft per acre for 30-inch rows).

Module Cover Publications

Poor module covers can be a serious problem with respect to seed cotton storage when rainy weather is encountered. Dr. Steve Searcy and Shea Simpson have generated some publications dealing with module cover issues. For a

copy of the brochure, click here. For a copy of the poster, click here.

Late-Season Weed Issues

While touring across the High Plains for various meetings, one thing I noted was the lack of excessive weed pressure this year. I think that this is a result of many producers planting Roundup Ready Flex cotton and having timely applications of glyphosate on these fields. The label states that a maximum of 44 ounces per acre of WeatherMax/OriginalMax formulations can be used between layby and 60% open bolls, but not more than 128 ounces per acre total for the season. There is a 7 day preharvest interval.

However, there are still many Roundup Ready varieties planted across the region. We have been getting some calls concerning the use of Roundup (or other glyphosate materials) over-the-top to kill some late-season weeds in Roundup Ready varieties. Roundup WeatherMax/OriginalMax can be applied over-the-top per label directions once the crop has reached 20 percent open bolls. Up to a maximum of 44 oz per acre of Roundup WeatherMax can be applied at least 7 days prior to harvest. If producers choose to treat fields which are not at 20 percent open bolls, they should recognize that they are on the "salvage" portion of the Roundup WeatherMax label. The "salvage treatment" is limited to 22 oz/acre of Roundup WeatherMax sprayed over-the-top of cotton plants and weeds. Based on data from previous field projects, in some years we obtained slight, but statistically significant yield losses when applying the salvage label rate of Roundup near cutout. Plant condition, as affected by environmental factors, appears to influence potential yield loss. I doubt if there would be any problems going later than that, but remember, unless your field is at 20 percent open bolls you are on the "salvage label."

Roundup can also be applied as a harvest aid material to conventional cotton specifically to target weed problems and/or to reduce regrowth potential. Effective silverleaf nightshade (or whiteweed) control can be observed in the following season with application of 22-44 ounces per acre of Roundup WeatherMax when weeds are in the green-berry stage. Control of severe weed infestations may be increased by the higher rate. Research has shown that reductions in weed populations of up to 97 percent can be obtained from such an application. Applications made in September should target cotton that is 50-80 percent open. After October 1, cotton can be treated when 30 percent of the bolls are open. Regrowth in Roundup Ready cotton varieties will not be controlled by Roundup application. Roundup also should not be applied to fields grown for seed production since viability and/or vigor of seed will likely be reduced.

For more information, see the article provided by Dr. Peter Dotray and Dr. Todd Baughman concerning late weed control in cotton and peanut, click here to view the article.

September Meetings/Tours/Industry Field Days

Although fall crop tours have begun, we still have several on the calendar. Also, industry field days may also be of interest. Here are the ones of which I am aware. For specific information, call Extension agents or industry representatives for more details.

- TPPA Precision Ag Expo, Ollie Liner Center, Plainview, September 6
- West Texas Agricultural Chemicals Institute, September 12
- Yoakum County Crop Tour, September 12
- Floyd County Crop Tour, September 18
- Lynn County Ag Tour, September 19
- Mitchell County Ag Tour, September 20
- Crosby County Crop Tour, September 21
- Harvest Aid Meeting, Hale County, September 24
- FiberMax Field Day, September 27

RKB

Cotton Market Update

For the first time in a quite a while we have seen a positive price response to bullish news in the cotton market. Last week the technical signals continued to point down in the face of excellent export numbers reported by USDA mostly due to economic forces outside the cotton market. Two weeks of low prices are finally starting to have an effect on export sales figures. Total sales of 476,300 running bales bring the total sales figure for the current marketing year to 29% of the latest USDA estimate of 16.7 million 480-pound bales. This week's shipments of 322,900 bring total exports to 7% of the projected total, only 3 weeks into the marketing year. The current pace of shipments, if continued for the entire season, would translate into nearly 18 million bales.

Net Upland sales of 447,700 running bales were 13 percent above the prior week. The major buyers were China (216,000), Turkey (53,200), Mexico (45,500), Indonesia (36,600), Thailand (14,800), and Vietnam (13,500). Net sales of 12,000 for delivery in 2008/09 were for Mexico. Exports of 319,300 were 3 percent above the week earlier, but 13 percent under the prior 4-week average. The primary destinations were China (164,800), Mexico (40,300), Turkey (32,300), Indonesia (20,800), and Thailand (12,500). Net American Pima sales of 28,600 were primarily for China (26,700). Exports of 3,600 were mainly to China (1,100) and Pakistan (1,000).

Since this market has been dominated by technicals for the last 6 months or so, it is worth noting what is going on with the charts for this market. We have seen 18 consecutive closes below the 9-bar moving average since the current downtrend began on August 6th. There has not been a single positive technical indicator since that date. This week, when we penetrated the 61.8% retracement level, I truly believed there was nothing left to stop this thing from going right back down to the life-of-contract low 5160. However, the response Thursday morning to the positive demand numbers, in the face of growing woes in the economy, has caught my attention. A close today above the 9-bar average of 5808 would be the first positive technical sign since the first week of August.

Loan stocks held by Texas farmers are becoming a concern as well. As of August 21st, Texas producers had 295,818 of the 403,513 bales of producer held cotton in the loan, or 73%. Much of that can be explained by timing, since Texas farmers are generally the last to put their cotton in the loan. However, most of the producers I have talked to have 6 weeks or less to redeem that cotton or face forfeiture at a cost of $20-25 per bale. The only chance for redemption at a rate that will not cost producers anything out of pocket will come from an up-trending market. Today's open gives the first glimmer of hope for that to happen. JAY

Small Grains Agronomy

Wheat for Grain

Current Market & Fall Acreage

You thought wheat contract prices in the Fall of 2006 were good! Now prices are even higher with July 2008 futures about $5.90/bu and current cash prices at ~$6.50/bu. Nationwide there appears to be high interest in planting more wheat in all regions.

What does this mean for the Texas South Plains? This region is not a choice region for winter wheat production, in part due to our sandy soils, long-term median rainfall of 2.0" from Nov. 1 to Feb. 28th, and need to irrigate at some level to have realistic yield potentials. Lubbock County and much of the South Plains—the exception being the northwest counties—can expect to harvest dryland wheat about 1 year out of 2.

The South Plains is headed for a significant increase in wheat acres this Fall, especially if we can get the cotton crop out of the way to enable wheat plantings by early November. In a normal year without the delayed maturity in our

cotton crop producers could readily meet preferred planting dates for wheat for grain. With the need for an extended season on our cotton this will push back wheat planting in some cases late enough into November to reduce wheat yield potential.

Optimum Planting Dates for Wheat Grain

The optimum range of planting dates for wheat grain is centered on the targets noted below. These targets represent typical planting dates that allow for good stand establishment before cold can diminish germination, stands, and tillering. On the other hand, significantly earlier planting may not enhance yields and can in fact reduce yield or economic potential due to more water use, more insect pressure in warm temperatures, etc. See additional comments about dryland below.

- Northwest Counties—October 10-15
- Central South Plains—October 20
- Lower South Plains (Lamesa)—October 25

Producers can achieve similar yields in most years planting after these dates, but at some point yield potential does decline. In 2006 many wheat fields were planted throughout November, especially to the south of Lubbock. Producers who were able to seed before the teens of November did pretty well, but in contrast to 2005 fields that were planted in mid November and later in 2006 appeared to suffer in establishment, and never caught up. For the central South Plains I expect a significant reduction in yield potential begins about mid November, and I would further expect that a December 1 planting date (which would require a higher seeding rate) would experience a reduction in yield potential of one fourth to one third (25-33%) relative to the more optimum planting date noted above.

A note about dryland wheat planting dates for grain: Soil moisture dictates fall seeding for wheat when no irrigation is available. September is a relatively wet month for the region, and average rainfall for October for most South Plains counties is 1.5-2.0". It is likely at some point that you will receive planting moisture for an October seeding. Planting dryland wheat for grain in September when there is no intent to graze can waste water due evaporation that otherwise could contribute to grain yield. If debating whether to plant dryland wheat for grain when you have moisture in September I am inclined to recommend that you wait, particularly in the central and lower South Plains.

Wheat Grain Seeding Rates

Recent recommendations for irrigated wheat at optimum planting dates target 60 lbs. of seed per acre. This is less than the rates Extension recommended as recently as about 2000, which was up to 90 lbs./A. Research has consistently shown that little to no yield increase has resulted from seeding rates above 60 lbs./A. If you have top end irrigation, you might bump it up a bit. Planting more than 3-4 weeks after your optimum planting date may require you begin increasing the seeding rate. If seeding after Thanksgiving it is advisable to increase the target seeding rate 50% to compensate for potential lack of tillering.

For dryland seeding rates 30 lbs./A should be adequate for most conditions, however, if seed bed and soil moisture is only fair, then a producer should err on the safe side to 40 lbs./A to ensure the stand is achieved. Similar to irrigated wheat noted above, for seedings from Thanksgiving on the seeding rate needs to be significantly increased.

Nitrogen Fertility Targets

There are two rules of thumb for nitrogen (N) in wheat depending on if you have soil test information available:

- No soil test: 1.2 lbs. N per bushel of yield goal
- With soil test: 1.5 lbs. N per bushel of yield goal, then adjust fertilizer N for the soil test

If residual fertility is good then you may choose to delay all N to topdressing in February and early March. Otherwise 1/3 of N in the fall pre-plant or at planting will ensure that the tillering, etc. is not limited.

Wheat Variety Trial 2007 Results and Recommendations for 2008

By Brent Bean, Extension Agronomy, Texas A&M—Amarillo, bbean@ag.tamu.edu

Resources for Texas High Plains wheat available on the wheat page at Amarillo. Dr. Bean's complete wheat report for the 2006-2007 are also available on the web. These include disease observations, additional variety comments, and summary tables of all 12 High Plains irrigated and dryland variety trial sites from Gaines Co. to the top of the Panhandle.

Wheat Variety Trial Results and Recommendations

The 2006 and 2007 years were two extreme growing seasons on opposite ends of the spectrum. In 2006, conditions were very dry in the spring leading to poor wheat yields, but 2007 was just the opposite. These two extremes gave us an excellent opportunity to evaluate wheat variety performance.

Irrigated Trials

TAM 111 had the overall best yield average of all hard red winter wheats. Other varieties topping the irrigated trials were *Fuller* (KSU), *Dumas* (AgriPro), and *Duster* (OSU). These varieties yielded in the top 25% in at least three of six irrigated locations. *TAM 111* has been the most consistent irrigated wheat, yielding in the top 25% in 13 of 19 locations over the past three years. The variety has stripe rust resistance, good straw strength, and is unlikely to shatter. *Dumas* continues to consistently produce a high yield under irrigation and has very good straw strength.

Dryland Trials

Many of the varieties that performed well under irrigation also yielded well in dryland trials. Topping the trials were *Fuller*, *Hatcher* (CSU), *TAM 111*, *TAM 112* (TAMU), *Keota* (Westbred) and *TAM 304*. Both *Fuller* and *TAM 111* were in the top 25% in five of six locations. *TAM 112* is a green bug tolerant variety that had an excellent year in 2006.

Wheat Variety Recommendations

Variety Recommendations		
Full Irrigation	**Limited Irrigation**	**Dryland**
TAM 111	TAM 111	TAM 111
Dumas	Dumas	TAM 112
T81	T81	Endurance
Jagalene	Jagalene	Fuller
TAM 304	TAM 304	Hatcher
	Endurance	Cutter

Varieties that are placed in the recommended list in the text box are those that have consistently performed well over the years at multiple locations in the Texas High Plains. The varieties also cannot have significant deficiencies such as lodging or poor grain quality. Clearly the last three years *TAM 111* has been the best variety to plant in both dryland and irrigated trials. *Dumas* has provided consistently high yields under irrigation. *Jagalene* and *Cutter* were very disappointing varieties in 2007. However, their performance in previous years warrants keeping them in the recommended list. The poor performance of these two varieties in 2007 serves as a good example of why it is important to plant more than one variety. *TAM 112* with its greenbug tolerance and moderate level of resistance to wheat streak mosaic has helped make it a consistent performer, particularly under dryland conditions. Varieties making the list for the first time are *T81*, *TAM 304*, *Endurance*, *Fuller*, and

Hatcher. *TAM 304* has finished in the top 25% in over half of the irrigated trials the last three years. It has good leaf rust resistance and moderate stripe rust resistance. Test weight tends to be lower than average. *Endurance* from Oklahoma State is considered a dual-purpose wheat that is later in maturity than most of the other varieties. Although it is not going to lead many trials it always seems to be in the top 33% in yield. Normally I do not put a variety on the recommended list until we have tested it for at least three years. However, because of the performance of *Fuller* and *Hatcher* in two completely different environments (2006 and 2007), I feel comfortable in recommending them after only two years of trial data.

How has this recommendation list changed from past years? (Trostle)

1) TAM 110, though still a good variety, has been deleted. This has been a solid greenbug resistant wheat variety for several years, and it was recommended for limited irrigation and dryland. If you can get greenbug resistant TAM 112, which has slightly better yields and grain quality, then do so. Some question whether TAM 110 seed sources are pure the way they should be, and I have seen early maturity TAM 110 have some leaf rust problems.

2) TAM 112 was deleted from the limited irrigation list. Breeders have cautioned about growing TAM 112 under irrigation due to the variety's susceptibility to some diseases.

3) TAM 105 has been off the dryland list for a couple of years now, but it is still planted on a significant number of acres. Seed sources may no longer be pure. This variety has been surpassed by newer genetics. One factor that keeps a significant amount around is that TAM 105's Plant Variety Protection has expired.

4) Jagger has been off the irrigated and dryland list for a couple of years now. It is a parent to Jagalene, which does not break dormancy and potentially suffer from late spring freezes, the way Jagger does. In normal years Jagger is still a good wheat, but the tendency to break dormancy early creates unnecessary risk. Jagger may benefit from heavy grazing to potentially delay maturity and susceptibility to freeze injury.

Alfalfa Resources for the Texas South Plains

Numerous alfalfa resources for agronomy, fertility, stand establishment, and weed control for the Texas High Plains are available on the web at http://lubbock.tamu.edu/othercrops Producers in the Texas South Plains should target early and mid September for seeding alfalfa into firm seedbeds and consider applying 2 years worth of P fertilizer requirement prior to planting. Roundup Ready alfalfa is not currently available for purchase or planting due to a federal injunction that prohibits its planting until EPA and USDA prepare an environmental impact statement, which is not expected to be complete until 2009.

These and other alfalfa production issues will be discussed in next week's edition of FOCUS on South Plains Agriculture.

USDA Funds Winter Canola Research for West Texas, New Mexico

USDA has funded a two-year canola research project coordinated by Calvin Trostle along with partners at Texas Tech and New Mexico State. This project will implement variety and agronomic testing as well as forage trials to evaluate the adaptation of winter canola in the region. Canola is an oilseed crop that produces excellent food grade oil which is also the preferred oil for making biodiesel.

Canola plantings in the region should be targeted from early September in the Panhandle to mid-September in the South Plains. Some winter canola varieties are Roundup Ready. This will give wheat producers an option in the future to address pesky winter weed problems. Currently there are no delivery points in the Texas High Plains, but that may change due to the growth of canola in western Oklahoma as well as a new biodiesel plant in Clovis, New Mexico, which if

they can achieve their goals would require 200,000 to 250,000 acres of canola.

Relevant canola production resources of use for the Texas High Plains are found at http://www.canola.okstate.edu/ If you or someone you know is interested in canola or has a small test planting anywhere in West Texas or New Mexico in 2007 please contact Calvin Trostle. I would like to follow these fields through the coming season and compare production tips. CT

FOCUS on South Plains Agriculture

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