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FOCUS on Entomology

For South Plains Agriculture

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COTTON INSECTS

It is time to put the finishing touches on this year's crop. Insects can still be found in some fields but their ability to cause problems has past. Beet armyworms are probably the most prevalent species out their as far as new egg masses and caterpillars, but again, bolls that will collect enough heat units before cold weather shuts us down are pretty safe by now. Some bollworms and aphids can also be found but their threat is over as well. It looks like we will dodge the sticky cotton problem for another year. Most insect infestations are concentrated in the late planted fields or fields receiving late irrigations where the water should have been shut off. These fields will not mature out their latest bolls that worms could damage. Let's turn our attention to getting this crop off the stalk and to the gin.

Boll weevil numbers have increased during the previous three weeks with the biggest increases occurring last week.

Average number of boll weevils per trap per week accumulated over 20 weeks. (Week ending September 8, 2002)

Zone	2002	2001	2000
NWP	0.00037	0.009	0.201
WHP	0.001	0.015	0.443
PB	0.012	0.011	0.369
NHP	0.004	--------	--------
SHP	0.003	--------	--------

All zones experienced these increases but the ones that had the biggest percent changes included the Permian Basin and the Western High Plains zones. Increases from two weeks ago to last week ranged from 3X to 7X. But only one zone appears to have somewhat of a problem. The Permian Basin Zone trap catch average increased from 0.026 two weeks ago to 0.156 last week. There are several plausible reasons for this including migration up from the St. Lawrence area and failure of the program to adequately detect increases in this area. You can bet that the Foundation is working feverously to bring the situation back in hand. The good news this week is that trap catches have declined, hopefully as a result of increased vigilance and spraying.

These trap increases, which reflect increases in boll weevil numbers and movement between

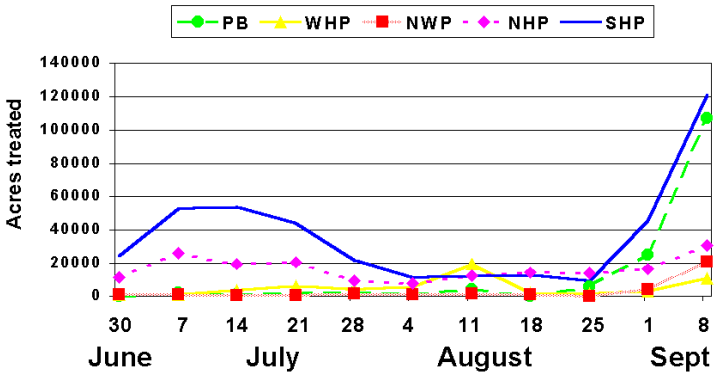
fields, did result in pretty significant increases in sprayed acreage last week.

Acres sprayed this past program week (ending September 8, 2002) and accumulative acres sprayed to this date.

Zone	Week ending 9/8	Accumulative	Acres in zone
NWP	21,123	34,596	477,111
WHP	10,709	59,868	688,766
PB	106,873	150,005	459,117
NHP	30,714	197,002	440,687
SHP	120,863	471,860	1,096,240

These increases in sprayed acreage will be especially noticeable in the Northwest Plains and Permian Basin zones were last week's acreage represented 61 and 71% of the total acre-treatments to date, respectively.

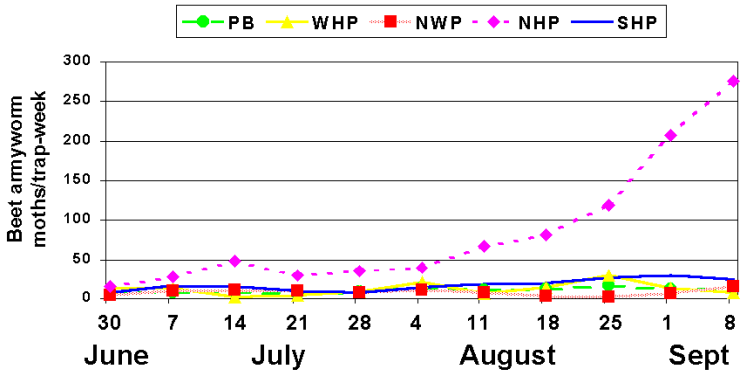
Weekly acreage sprayed in five Texas High Plains boll weevil eradication zones. 2002



Foundation beet armyworm traps are still catching beet armyworm moths, reflecting the activity we are seeing in fields. With the exception of the Northern High Plains Zone, beet armyworm moth numbers have generally declined and are at low levels.

Unfortunately, as bad luck would have it, the thrust of the beet armyworm attack was into the two newest eradication zones, the ones that were spraying the most for boll weevils early. Luckily, most spraying was on a limited acreage early and on only a relatively few fields when compared to the total acreage and field numbers in these zones.

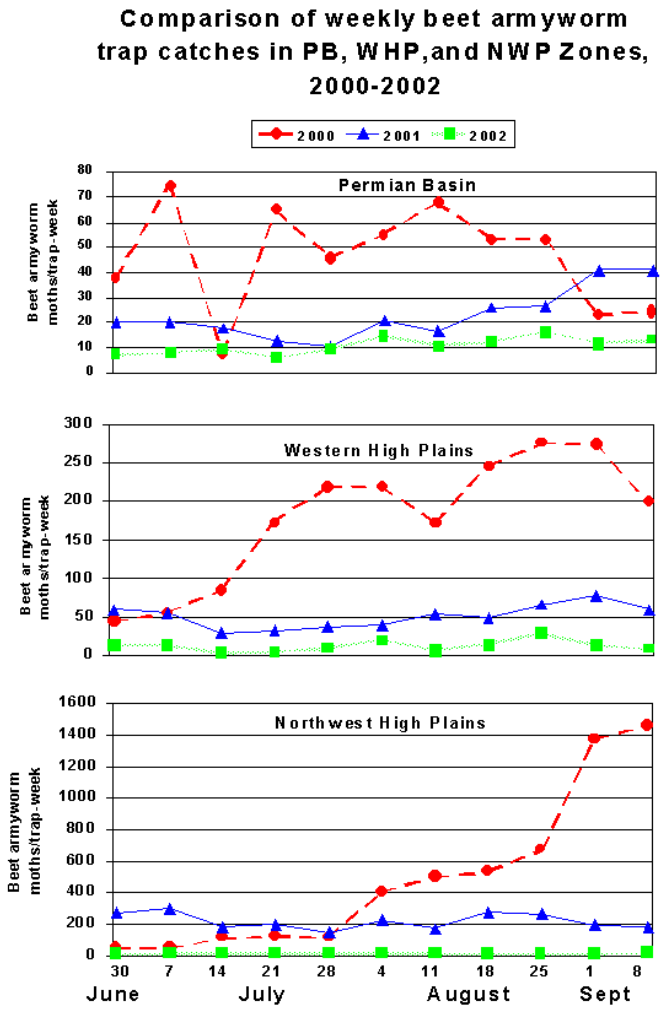
Comparison of weekly beet armyworm trap catches in PB, WHP, NWP, NHP and SHP Zones, 2002



As far as beet armyworms are concerned, it seems like bad luck has followed us each time we initiated the first full season of the spray program. The year 2000 was certainly a major beet armyworm year, but even though 2002 won't set any records, armyworm numbers were up compared to most years. A look at previous graph for the newer programs and the next graph for the three oldest programs clearly does show that beet armyworm moth trap catches were highest during the first full season spray program. Thank goodness we are over this hump!

A referendum is coming up shortly for producers in the three oldest High Plains Zones. This will be a vote as to whether or not to continue the program after the first 4 years. All other zones in Texas have approved the continuance of their programs when asked. You will need to too! The big cost will already be over but it will be necessary to complete the clean-up and enter in the maintenance phase where trapping continues in order to detect any weevils that might accidentally enter the area. Without this detection system, an infestation could develop to a level that would be quite costly to eradicate. A referendum will be conducted for the Western High Plains Zone in

early December, in the Northwest Plains Zone in late February and in the Permian Basin Zone in early April. We must keep the weevil out of our area if we expect to convert our warm falls into harvestable top bolls. You can be sure this is not the last you will hear from me on this subject.



As I look back on the season I would have to say that this was not one of the worst pest years or the easiest. It was a mixed bag of problems depending upon where you farmed and what you did to manage pest problems. Thrips were certainly a pest to contend with in seedling cotton but favorable growing conditions and an increase in grower's interest in investing in thrips control appear to have minimized yield losses. Early square retention was very high this year with minimal interference from cotton feahoppers or Lygus bugs. Lygus failed to develop into a later season problem for the most part with the exception of a few isolated fields.

Aphid numbers remained fairly stable with the help of lady beetles but eventually increased to bothersome levels in July, especially in fields treated with pyrethroids targeting bollworms. Then, for some inexplicable reason, aphid numbers generally "crashed", never to be seen again. This made it extremely difficult to put out insecticide trials. After aphids reached 50-200 per leaf, infestations often declined in 3-7 days. I am not sure whether some fields needed a treatment, relying on 20/20 hindsight. Furadan 4F was available through another Section 18 but many producers opted to use the new material, Intruder, with great success. Cost was reasonable, control was great and environmental impact was minimal.

Bollworms moved into the area in July, appearing to fly in on the prevailing southeast winds. Lubbock County was the hardest hit but adjacent counties and the historically early area of the Gaines County region also had problem fields but at lower levels. Pyrethroids were the primary insecticide class used. Control was not as good as most folks wanted, usually averaging in the mid 70's to mid 80 percent level. A second wave hit even before the first wave was over and bollworms finally moved out of corn in mass to the north in numbers not seen the last few years. The result was 1-4 applications made targeting bollworms and other caterpillar pests. While these pyrethroid applications did increase aphid numbers, the resulting increases were not to the degree we have observed in the past.

Beet armyworms also appeared to fly in on the southeast winds and landed smack dab in Lubbock County, "splashing" out into adjacent counties. There was no clear relationship between armyworm problem fields and eradication program spraying. Intrepid, an insect growth regulator was promoted for its good control and long residual activity. And it

delivered! Unfortunately, Intrepid does not control bollworms at the rates we use for armyworm control. Fall armyworms moved in after the beet armyworms, following the same distribution pattern. Intrepid again deliver good control. There was a late run of pink bollworms in August and September in the southwestern area of the High Plains, but for the most part, fields escaped significant damage. A mild winter may bring this pest back next year to haunt us.

This may have been a good year to plant Bollgard type cottons, especially in areas where bollworms and pink bollworms were a problem. If pyrethroids end up not providing the high level of bollworm control we have come to expect from them then Bollgard cotton may be the way to go. But remember that beet armyworm control is marginal with this technology and fall armyworm control is almost nonexistent. But Bollgard II cottons should take care of these problems once released for our use.

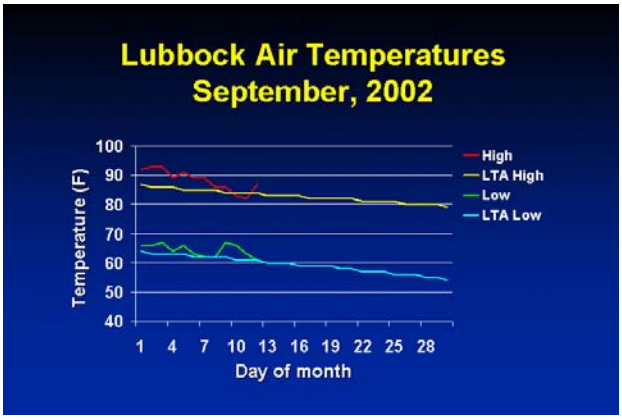
Boll weevil eradication progressed at an accelerated pace keeping weevil numbers down to unprecedented levels in the two newest High Plains zones. Hopefully this trend will continue to the plant killing frost and into next year. It won't be long before the boll weevil is just an unpleasant memory.

A COTMAN web site will be established this winter on the Lubbock Center home page http://lubbock.tamu.edu. We intend to post information at this site on a fairly regular basis which will include a set of auto-tutorial modules on COTMAN complete with visuals, a posting of COTMAN research and demonstration results for the current and previous years, and a question/answer type forum. We really like COTMAN as a research and a crop management tool, I think you will like it too if only you give it a chance. **JFL**

COTTON AGRONOMY

Overview. Cooler temperatures, overcast skies, and spotty rainfall have dominated the weather picture for most of this week. For the first three days, everywhere I went on crop tours, we got chased out of the fields by showers. Monday morning, eastern Floyd County received an inch or more, and upwards of 2 inches was reported at Levelland this week. These rains may be beneficial for helping to finish up the irrigated crop, but when and if warmer conditions return, we'll be faced with regrowth potential in "burned up" dryland cotton.

Although we had considerable cloud cover, the cooler temperatures are not that much off from our long-term averages (LTA). The cloudy conditions did not help maturity, however. During the first week of September, we had accumulated about 125 DD60 heat units at Lubbock compared to the LTA of about 100. For the entire month of September, we are now sitting at 197 vs. 164, or again, about 20% above normal for the first 12 days. Based on National Weather Service data for Lubbock, we are now at 2309 heat units for a May 1 planting, vs. 2145 for the LTA. Hopefully, we will have more good weather and get this crop harvested in a timely manner.



Many producers are beginning to kill lower yielding cotton with paraquat-based materials (Cyclone Max or Boa). Weather conditions this week have prevented harvesting of some of

these fields. The region is poised for the larger "harvest aid run" of ethephon and defoliant tank mixes when weather conditions will permit. Several harvest aid efficacy trials have been established this time. We will be getting the results communicated to you as soon as possible.

Low-cost harvest aid considerations. We have been getting a lot of questions concerning the level of defoliation required to obtain good leaf grades. In 1999 a regional project was conducted (by Extension Agronomist colleagues and Dr. Alan Brashears USDA-ARS agricultural engineer) at several sites in Texas and southwest Oklahoma. We established two projects in the High Plains last year (Claytonville and Crosbyton) to investigate this. Treatments included a "Cadillac treatment" of a ethephon-based boll opener plus defoliant followed by Cyclone termination (the low leaf treatment) versus a single application of Cyclone at 32 oz/acre or what is now Cyclone Max at 21.3 oz/acre (the high leaf treatment). Two modules were built for each treatment. One was ginned immediately (not stored) and the other was ginned in about 2 weeks (stored). The Cyclone only treatment resulted in significantly higher amounts of stuck leaves, but the results from each site indicated that leaf grades were ultimately similar after the ginning process. To briefly summarize results, the following conclusions were made for each location:

Crosbyton: This project was conducted in a field of Paymaster 2200RR which yielded about 1.75 bales/acre. Visual estimates indicated that the high leaf treatment resulted in about 70 percent desiccated or stuck leaves and 30 percent defoliation, whereas the low leaf treatment had about 5 percent stuck leaves and 95 percent defoliation. A John Deere 7455 stripper with a field cleaner was used to harvest the project. Results from this project indicate that although some fractionation components were higher for the high leaf treatment, the ginning process was sufficient to remove the foreign material and improve leaf grade. Color grades were unaffected by treatment or storage (all color grade 11). For an average of 15 bales per module for each treatment, leaf grades averaged 1 for high leaf-not stored; 1.1 for low leaf-not stored; 1.1 for high leaf-stored; 1.3 for low leaf-stored. No "barky" bales were obtained. The relatively dry fall conditions most likely contributed to the overall low leaf and high color quality conditions at this site.

Claytonville: This project was conducted in a field of Paymaster 2200RR which yielded about one bale/acre. Visual estimates indicated that the high leaf treatment resulted in about 60 percent desiccated or stuck leaves and 40 percent defoliation, while the low leaf treatment had about 5 percent stuck leaves and 95 percent defoliation. A John Deere 484 stripper without a field cleaner was used. Results from this project indicate that although some fractionation components were higher for the high leaf treatment, the ginning process was sufficient to remove the foreign material and improve leaf grade. Color grades were similar for both high and low leaf treatments if ginned immediately (11's and 21's). If modules were stored for a two-week period of time, the color grades tended to be reduced by a greater degree for the high leaf treatment (8 of 8 bales were 21's) than the low leaf treatment (4 of 8 bales were 11's remainder were 21's). Average leaf for high leaf-not stored was 1.6; low leaf-not stored was 1.1; high leaf-stored was 2.1; low leaf-stored was 2.0. No "barky" bales were obtained. Again, the relatively dry fall conditions most likely contributed to the overall low leaf and high color quality conditions at this site.

Farwell: Last year, an additional large plot, commercially treated, harvested, and ginned trial was conducted near Farwell, which included a "Cadillac treatment" of Prep plus Def and a single, high rate application of Cyclone Max. This project was conducted on the hairy-leaf variety, Paymaster 2145RR, cotton which was not rank but very high yielding. A complete report on results from this trial can be found at:

http://lubbock.tamu.edu/cotton/docs/farwell_lintplus.htm
In this project we barely affected leaf grade (see Table 2 in report), but did decrease lint turnout by about 2% (report Table 1 - Cyclone Max only vs. Prep plus Def treatment) and thus increased ginning costs by $4/acre on this 1400 lb/acre cotton. Again, this cotton was in very good shape going into the fall, had a fairly high natural leaf shed, and dry conditions persisted from application through harvest. Also, remember that October 2001 was the third driest on record according to the National Weather Service.

What is the overall bottom line ?? The significant concerns of this low-cost harvest aid strategy include: 1) most of these trials were conducted with Paymaster 2200RR, a relatively smooth leaf type cotton, 2) the fall conditions were extremely dry and fields did not receive any rainfall after application, 3) gin turnout from single high rate paraquat (Cyclone Max or Boa) treated cotton will likely be lower than with expensive "Cadillac treatments, 4) your ginner might not want to take your cotton, and 5) your results may vary. If a lot of stuck leaves are left on plants in the field and a significant rainfall event occurs, then the ability of a gin to remove the trash will likely be reduced. Everyone should remember the fall of 1997 and what we observed with leaf grades after September rainfall. In some locations, leaf grades went "into the tank" even though many fields were "totally defoliated". The same thing might happen again, and if fields have considerable amounts of stuck leaves, then serious leaf problems might be encountered. Start out small and work up. Don't treat the whole farm at once. **RB**

2002 NATIONAL SUNFLOWER ASSOCIATION TEXAS SURVEY RESULTS

Trained Texas Cooperative Extension personnel in conjunction with the NSA surveyed a total of twelve fields, 6 in the Texas Panhandle and 6 in the South Plains, the week of August 12th. NSA initiated surveys in the Dakotas in 2001, and has expanded survey work to Kansas, Colorado, and Texas. Nationally, the purpose of the survey, which targets one field per 5,000 acres, is to assess insect, disease, weed, and management problems that could be addressed by industry, research, and extension. All fields are marked with GPS so maps can be prepared which may reveal patterns in crop management or pest distribution.

Texas Panhandle counties included in the survey were Moore (3 fields), Sherman, Hartley, and Carson. South Plains counties included Crosby (2), Lubbock (2), Floyd, and Dawson. These fields were selected randomly, and eight were confectionary sunflower. All but one field received at least limited irrigation. All Panhandle fields were on 30-inch rows whereas all South Plains fields were on 40-inch rows. Conventional tillage was found on eleven fields.

Yields were lower than I normally expect with no single field having an estimated yield above 1540 lbs./A. Estimated yields among eight confectionary fields ranged from 780 to 1540 lbs./A (average 1040 lbs./A). Three of four oilseed fields were for hybrid seed production, and yields were 700 lbs./A to 1530 lbs./A. {I would normally expect to find at least a few fields with yield potentials at or above 2000 lbs./A}.

Plant populations (6800 to 14000 plants/A, average 9950 plants/A) in general were lower than I would target for confectionary sunflower. Ideally, I would recommend a targeted seed drop of about 17,000 seeds/A for irrigated and 11,000-12,000 seeds/A for dryland. Plant populations for irrigated oilseed were 9200 (much too low) to about 18,800 plants/A. Targeted seeding rate drops for irrigated oilseed sunflower should be about 20,000-23,000 seeds/A to a low dryland seeding rate of about 14,000 seeds/A if soil

moisture is limiting. Current seeding rate trials (year 2) in Moore and Hale counties should help target seeding rates when the research is complete.

NSA survey work identified general yield limiting factors, if any, for each field. As noted above, yields were not high. So what could explain lower yield potential? These factors can range from hail damage, bird damage, disease, drought, insects, plant spacing or lodging, etc. Four of six Panhandle survey fields rated low plant population as the most limiting factor, in particular if populations were less than 10,000 plants/A. Drought was also limiting on two fields (even though irrigated), as was poor plant spacing. The latter point highlights the importance of using a good planter for sunflower such as an air-vacuum planter. Obtaining a uniform emergence on stand also assists the producer in sunflower head moth control.

Yield limiting factors among South Plains fields were poor seed fill (two of three hybrid seed production fields) and poor stand uniformity or low plant population. One confectionary field was of particular interest. From the turnrow it looked very good—nice head size, healthy plants, etc. But to walk into the field was to realize there was a poor stand, with skips of 3 to 6 feet between plants fairly common. The individual plants in the field were very good, but there was only about 6800 of them. Although individual sunflower plants compensate very well, the yield potential was estimated at 850 lbs./A. Five of six South Plains fields had some lodging either at mid-stalk (average 4%) or ground level (4%), but Panhandle fields were relatively free of any lodging. Ultimately, plant population is not the sole factor in governing sunflower profitability, particularly for confectionary where the large seed is worth about 2.5 times the small seed among 2002 contracts.

Insects. Only major insects were cataloged for each field, namely, the survey recorded heads that had webbing from the sunflower moth larvae. I call the adult sunflower moth "the boll weevil of sunflower" in Texas because of the damage it can wreak on sunflower if not controlled properly. Bad infestations of burrowing larvae on the head make heads prone to Rhizopus head rot. If producers have this insect problem in spite of spraying, chances are they sprayed too late. In the Panhandle, 4 of 6 fields had webbing on the heads ranging from 20 to 100% (avg. 55%) along the edge, but at secondary sampling sites at least 50' into the field, only 2 of 6 fields had moth infestation (avg. 50%). All South Plains fields had evidence of larvae (avg. 63% around the field edge, including 3 of 6 fields with 100% infestation), perhaps due to earlier planting dates when sunflower moth tends to be more prevalent. Incidence of webbing in the field interior remained high (avg. 57% among 5 of 6 fields).

Stalks were split at each field to examine for larvae of the spotted sunflower stem weevil or the soybean stem borer in sunflower (*Dectes texanus*, the adult is the longhorn beetle). Both insects increase the potential for lodging. In general, fields with lower plant populations have larger individual plants that stand better. When producers find significant infestations of either insect they need to be ready to harvest as soon as possible to reduce lodging losses.

Stem weevil larvae are about ¼" long, and they bore down the stalk then feed in the hard outer portion of the stalk, most often at least 1-2" above the soil line. Stem weevil incidence was similar along field edges compared to field interiors. Only two fields had 10% or less infestation, and they were the southern most fields in the survey (south of Lubbock). Otherwise the average infestation with at least one larva per plant (and as many as 15) was near 60%.

The girdling of the soybean stem borer in sunflower was already evident in four fields simply from the unique appearance of the lodged plants. *Dectes texanus* girdles sunflower from the inside at the soil line,

leaving a smooth, cupped appearance on both the remaining root and lower end of the lodged stalk. These larvae (½ to ¾" long) have distinct segmentation, and they are cannibalistic so you rarely see more than one per plant. The larval feeding until girdling is almost all in the pith and the larva itself is usually found 1.0 to 2.5" below the soil line. Four of six Panhandle fields averaged 33% infestation around the edge, but only 2 of 6 fields had infestation in the interior (avg. 90%). In the South Plains infestations were similar, but again fields south of Lubbock were mostly free of infestation. As a rule of thumb, control of adult longhorn beetle is difficult as no pheromone traps seem to work, and the emergence extends over a period of up to seven weeks. We caution growers about planting sunflower after soybean. Also, sunflower next to soybean in the same year could cause problems. Over the past two years I have certainly seen significant losses due to this insect, but again we need to be ready to harvest as soon as flowers are dry enough and before significant lodging occurs.

Other insects were identified in field such as the caterpillar of the painted lady butterfly, a couple of carrot beetles feeding underground near the rootstalk, and a few insects that we didn't recognize, but their incidence was low and well below any threshold for economic damage.

Diseases in sunflower. Although we checked for seven stalk and head diseases in sunflower, only Rhizopus head rot and minor incidence of red rust (all but one field less than 2% leaf coverage) were found. Rhizopus is an opportunistic fungal infection in the head that requires some sort of injury or insect damage to penetrate the head (normally sunflower moth larval damage). This disease will finish what insects or other earlier damage started in devastating a crop once it gets a foothold. The key avoidance approach is sunflower moth control more than anything else. Rhizopus head rot ranged from 0% (two fields) to 50%, with an average of 10 percent. Five of 12 fields were 12% or higher, indicating some economic loss could be expected. I normally see at least a few diseased heads here and there in Texas fields, but we shouldn't be too concerned about it if we have done a good job on sunflower moth control.

Sclerotinia is a big part of the sunflower survey in the Dakotas, and it is their #1 concern as it develops in cool, moist conditions moving into fall. It will shred the head. The hot, dry environment in West Texas makes this disease very rare here. I have only seen one field with any sclerotinia in West Texas in the last four years.

Weeds in sunflower. We recorded weed incidence as none, light, moderate (~1 broadleaf plant or three grass plants per 1 foot of row), and heavy. Among weeds in the Panhandle, incidence was moderate to heavy in nearly all fields for Palmer ameranth, red root pigweed, puncturevine (goathead), and barnyardgrass. Other weeds that were generally prevalent included wild sunflower and johnsongrass. The South Plains fields tended to be cleaner. Light to moderate infestations of silverleaf nightshade (whiteweed), Palmer ameranth, and red root pigweed were found in most fields.

Sunflower survey wrap-up. If you would like an Excel spreadsheet file of the survey results contact me. Results will be shared with farmers of the surveyed fields. I found the survey very useful in my understanding in what I can do to assist sunflower producers. I am already making plans for next year's survey. Let me know if you are interested in assisting as a survey team member (growers, scouts, county agents, or sunflower industry personnel). I am also considering conducting a similar South Plains survey for peanuts in 2003 based on the sunflower model. The information gleaned may help identify research and extension priorities. Thanks to extension technicians Kyle Long and Stacy Hardin, Floyd-Crosby IPM agent Steve Davis, and Max

Dietrich, NSA research coordinator, for their commitment as survey team members. **CT**

WHEAT VARIETIES FOR GRAIN PRODUCTION

Brent Bean, Extension Agronomist at Amarillo, conducts at least three irrigated and three dryland wheat grain yield variety trials each year. I will be overseeing additional trials in the South Plains this year. You may find several years of grain yield results at http://lubbock.tamu.edu then clicking on "other crops." Bean notes that variety recommendations reflect the fact that each year is different in terms of moisture, temperature, insect or disease incidence, and frost dates. For this reason, always consider yield data over several locations for at least three years when considering varietal selection. It is advisable to plant more than one variety in order to spread your risk among different maturities, or varieties that demonstrate resistance to wheat streak mosaic, greenbugs, or some other pest.

Brent Bean wheat variety recommendations. Dryland: It is hard to go wrong with Custer (medium-early maturity), Jagger (medium), TAM 105 (medium), and greenbug resistant TAM 110 (can be early if planted early and the winter is warm).

Irrigated: Jagger, TAM 110, Ogallala (medium), TAM 200 (medium, possibly susceptible to freeze damage if it breaks dormancy early), and TAM 202 (early, but a more-input oriented variety). Other good irrigated varieties to consider may be TAM 302 (medium late, prone to light test weight) and 2137.

Recommendations will surely change as we obtain more variety testing data on newer releases. Some varieties that have demonstrated potential in initial trials are Dumas, Cutter, Jagalene, TAM 400, and Stanton.

My thoughts from Lubbock are that I find myself always suggesting that growers consider at least some TAM 110 because of its greenbug resistance (see FOCUS, August 30th edition). Its earliness should be less of a concern being further south if a late freeze would occur in the Panhandle.

Agronomic practices for optimizing small grain forage production. Brent Bean has drafted this title. If you would like an advance copy of this paper while we are reviewing and making additional changes call or e-mail me at the Lubbock Center.

South Plains wheat research plans, 2002-2003. Dryland clipping trials for 8 beardless and 8 conventional wheat varieties, two rye varieties, and a triticale will be conducted in Scurry and Lubbock counties. I will take regular clippings and one-time hay harvests at boot stage/early heading (high quality) and soft dough. We will also do a dryland grain yield test at Lubbock with about 40 entries. We will do the same for irrigated wheat in Lubbock County. **CT**

ALFALFA AGRONOMIC UPDATE

Several producers have already seeded alfalfa with the recent rains so it is too late to talk about fertility. But keep an eye on phosphorus levels, which are very important. Because P is immobile in the soil I don't hesitate to recommend that producers put down extra P prior to planting because for at least the next five years you can only make surface broadcast applications of this essential nutrient. Look for Rhizobium nodules next spring and summer. They supply the "free" nitrogen. If you don't get the nodules on the plants, lets try to figure out what happened.

Alfalfa requires more attention than any other field crop we have in the South Plains. Commit to good management for high quality hay. If you are still waiting to plant, ensure that you haven't overextended your irrigation

capacity. My goal is for more Texas High Plains alfalfa instead of Colorado hay to either supply the expanding dairy market or start making the trip down U.S. 84 toward Central Texas.

Take the time this winter to school yourself on alfalfa production. Call for a packet of information. Texas Farm Bureau and the Texas Chapter of the American Forage and Grassland Council are targeting intensive alfalfa training for West Texas in the next six months. I plan to be in the mix of planning and presenting content to help share with growers what I have learned about production in the Texas High Plains. **CT**

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