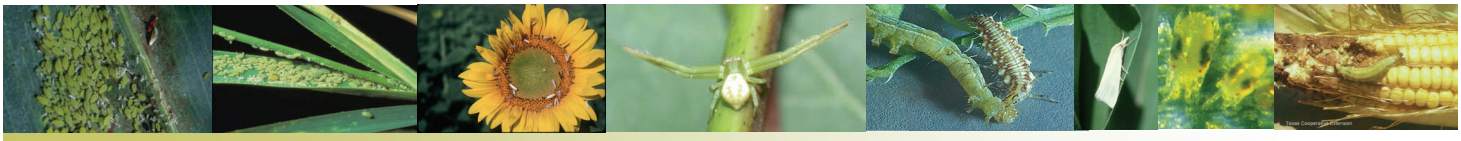

Panhandle Pest Update

Texas AgriLife Extension Service

AgriLIFE EXTENSION
Texas A&M System

Improving Lives. Improving Texas.

September 9, 2009 Issue #6

Sorghum Headworms

Special points of interest:

- Sampling for sorghum headworms and determining damaging threshold levels.
- Cotton Insect
- Wheat variety disease and insect ratings
- Sunflower insect management guide
- Upcoming meetings

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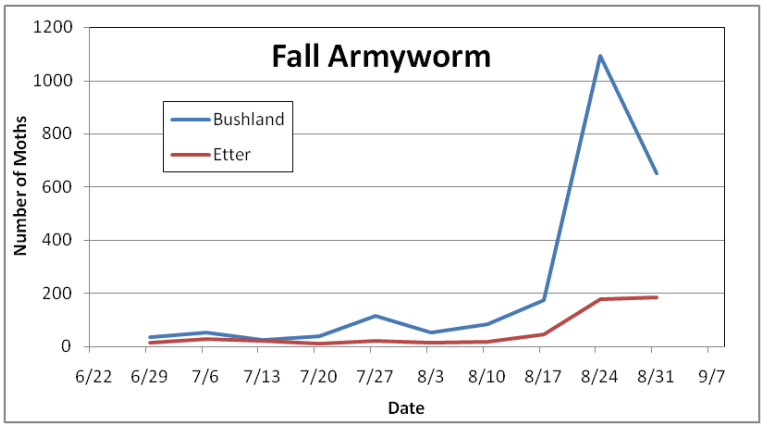
Grain sorghum fields across the area are flowering or in the grain filling growth stages. These fields are at risk from damaging infestations of head worms (corn earworms and fall armyworms). Moth flights for both corn earworm and fall armyworm are on the rise. Higher numbers of corn earworm moths have been caught in a light trap at Etter the last two weeks. Also, the number of fall armyworm moths have been very high recently in a pheromone trap at Bushland and have increased in a trap at Etter (See graph). This increases the potential for larvae being found in grain sorghum heads. Fields should be sampled at least weekly during the grain developing stages to determine if infestation levels are at treatable levels.

A beat bucket (white bucket) is a good technique for sampling fields. Sample at least 30 plants from a field and for fields larger than 40 acres take a at least one

sample per acre. Keep a separate count of medium (1/4 inch to 1/2 inch) and large (>1/2 inch) larvae. Then divide each of the two numbers by the total number of heads sampled. This number of medium and large sized larvae per head can be converted to the number of headworms per acre. Larvae smaller than 1/4 inch are not used in making treatment decisions because natural mortality is very high. If most headworms are this size and the number of medium and large size larvae are not at economic threshold, sample the field again in 3 to 4 days.



The economic thresholds for headworms were recently revised by Greg Cronholm and Allen Knutson. Refer to Managing Insect and Mite Pests of Texas Sorghum for a complete explanation of headworm thresholds. The threshold is based on cost of control (chemical and application costs combined), the expected market value of the grain, the estimated yield per acre, plant population, and the potential yield loss from feeding larvae. There are two ways to calculate the economic injury level. Both use the same factors and yield the same results. The first method uses equations to calculate the threshold as the number of larvae per head, while the second method determines the number of larvae per acre and is shown in table format in the above guide. Monti Vandiver, Extension Agent-IPM from Parmer and Bailey Counties has written a Microsoft Excel file that will calculate the threshold level as the number of larvae per head. This file is provided as an attachment when e-mailing the newsletter.

The following formulas can be

used for calculating threshold levels for medium and large size larvae per head.

If larvae are medium sized (1/4 to 1/2 inch) use the following formula:

$$\text{Number of medium-sized larvae per head} = \frac{\text{Cost of control as \$ per acre} * 9754}{\text{Grain value as \$ per cwt} * \text{No. heads per acre} * 0.19}$$

For example, if control cost = $9.00/acre (including chemical plus application costs), grain value = $4.50/cwt, and the number of heads per acre = 50,000.

Treatment threshold will be 2 or more medium size worms per head.

If worms are larger than 1/2 inch in size the following formula should be used to calculate the treatment threshold:

$$\text{Number of large sized larvae per head} = \frac{\text{Cost of control as \$ per acre} * 9754}{\text{Grain value as \$ per cwt} * \text{No. heads per acre}}$$

Then if all costs, grain value and number of heads per acre are the same, as previously stated, the calculated **treatment threshold for large larvae will be a minimum of 0.4 larvae per head (or at least 2 larvae per five heads).**

Sorghum Midge

Greg Cronholm, retired IPM Extension agent for Hale and Swisher counties, but still working, has reported the sorghum midge in high (4-6 per head) to very high numbers (12-18 per head) in some flowering fields . This level of midge infestations will cause significant yield loss if not controlled. If you have fields which are still flowering, check them every 2-3 days or until the heads have finished flowering. Information on thresholds and a list of insecticide for midge control can be found in the Texas AgriLife Extension Service publication B-1220, Managing Insect and Mite Pests of Texas Sorghum.

Cotton Insects

The corn earworm and fall armyworm moth activity may also result in bollworm and/or fall armyworm larval infestations in cotton. Dr. David Kerns, Extension cotton specialist at the Texas AgriLife Extension Service at Lubbock, provided detailed information about these two insects and when to quit protecting fruit in the September 1 issue of Focus on South Plains Agriculture. The following is a summary of Dr. Kerns's comments. A quality boll requires 750-850 HU to develop. Once a boll has accumulated 450 HU it should be safe from a bollworm egg lay, but bolls in a high irrigation regime or a shady canopy could be susceptible to damage.

The pyrethoids are the products of choice for bollworms, but good coverage is essential for good control. Pyrethoids are not particularly effective in controlling fall armyworms. So if a large portion of worm population is fall armyworm, a tank mixture of an alternative insecticide with a pyrethroid may be warranted. Products such as Belt or Coragen has activity against both fall armyworms and bollworms but the worms need to ingest these chemicals for best activity.

Wheat

Many of you are making decisions that will influence which variety to chose and your options for minimizing or preventing possible wheat disease infections and insect pest infestations. I am attaching a table as a pdf file that rates wheat varieties according to their susceptibility or resistance to diseases and pests . This table was compiled using information from research by Texas AgriLife Research and from the Kansas and the Great Plains 2001 publication by Steve Watson. Keep in mind there is no one silver bullet or superior wheat variety that is resistant to all diseases and pests. Different varieties will have better resistance or tolerance to some diseases and pests than other varieties. For example TAM 112 is a greenbug resistant variety with moderate susceptibility to the Barley Yellow Dwarf Virus that the greenbug vectors. It does express moderate levels of resistance to wheat streak mosaic virus, but may still become infected under heavy disease pressure. Also, very few varieties have high levels of resistance to any of the diseases. This would mean all varieties could be infected with a disease depending on the severity of that disease.

The varieties in the table are included in the uniform variety trials conducted by Texas AgriLife Research and the Texas AgriLife Extension Service.

Sunflower Insects

Late planted sunflowers that are starting to bloom or are blooming can be susceptible to sunflower moth egg lay and may need to be protected. We have just completed updating our guide, Managing Insect Pests of Texas E-579.

Research has shown that insecticide should be applied when 15 to 25 percent of plants are blooming and sunflower moths are found in the field. Unfortunately, blooming can progress so rapidly that by the time the producer gets spray equipment or an airplane into the field, it may be too late for an application to be completely effective. Follow these suggestions for effective sunflower moth control.

- At least 2 weeks before spraying, select and get a commitment from a custom applicator to be ready to spray; also decide which chemicals you will use so the applicator will have them on hand.
- Be ready to begin scouting as soon as you see the first blooming head in the field (late R4 stage). If you are a first-time grower, get assistance from those experienced in scouting for sunflower moth.

Besides the initial application, one to two additional insecticide applications at 5-day intervals may be needed when sunflower moth populations are moderate to heavy and moths are still active. In more northern states, pheromone trap sampling from growth stages R3 to R5.1 indicate that fields are at a high risk when more than four moths are captured per trap per night. However, treatment decisions should be made on the basis of scouting for adults at the time of bloom. Trap captures of fewer than four per night do not mean a field is safe from economic damage.

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Managing Insect Pests of Texas
Sunflowers
E-579
7-09

Insect pests are often a major limiting factor in Texas sunflower production. Of the 50 insect species recorded on sunflower in Texas, about 15 are considered potentially major pests. The sunflower moth is the major common pest of sunflower. Stem weevils, seed weevils, the stalk girdlers, and thistle caterpillar are of secondary importance, although they can be quite serious when abundant.

Both oilseed and non-oilseed (confectionary) sunflowers are grown in Texas. The small, black seeds of oilseed sunflower contain 38 to 50 percent oil. They are processed into sunflower oil and also used as bird feed. Confectionary sunflower seeds are usually large with black and white stripes. They are used for human consumption in a variety of food products.

Because the sunflower has a relatively short growing season, it is suitable primarily as a spring-planted crop or as a second crop after wheat. Sunflower can be an alternative crop where plantings of other crops have been destroyed by wind, sand, rain or hail. Drought tolerance makes sunflower an attractive dryland crop and an alternative in areas with limited irrigation. Sunflower also responds well under full irrigation.

Cultural practices that help reduce insect problems include crop rotation, modified planting dates, weed control, volunteer and wild sunflower control and tillage. However, the judicious use of insecticides is often required for successful sunflower production in Texas. Producers should be able to identify the insect pests that reduce sunflower yield and know when those pests are most likely to occur during the growth of the plant. They should also understand pest biology and the control measures that are most effective.

Insect pests infesting the head

Sunflower moth

Lepidoptera: Pyralidae, *Homoeosoma ellectellum* (Hulst)

The sunflower moth, also called the head moth, is the single most important sunflower pest in Texas. Sunflower moth infestations are usually heaviest early in the growing season, with another smaller moth flight possible later in the season. The adult is a small, slender, silver-to-buff gray moth about ½ inch long. It is most often seen resting on sunflower heads during the blooming period, especially in early morning and early evening.

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The Texas A&M System

Figure 1. Sunflower moths (photo by Scott Russell).

Figure 2. Sunflower moths (photo by Scott Russell).

Upcoming Meetings

September 14, 2009, Moore and Sherman counties Cotton Crop Tour, starts at 10:00 am at the Moore County Gin, contact Marcel Fischbacker, CEA at (806) 935-2594 or David Graf, CEA at (806) 366-2081 for information.

September 17, 2009, Claude Grain Sorghum turn-row meeting, contact Kyle Stewart, CEA at (806) 226-3021 for information.

September 22, 2009, 33rd Annual Randall County Ag Show and Crops Tour, contact J.D. Ragland, CEA at (806) 468-5543 for information and to RSVP by Friday September 18th.

Agricultural Waste Pesticide Collection Program, 8:00 a.m.—1 p.m. Collection of Pesticides and Used Motor Oil for free at the following locations:

- **Monday, Sept. 14—Moore Co., Moore County Gin,** contact Marcel Fischbacher, CEA, (806) 935-2594
- **Wednesday, Sept. 16—Deaf Smith Co., Deaf Smith County Bull Barn**, contact Rick Auckerman, CEA, (806) 364-3573
- **Friday, Sept. 18—Hall Co., Hall County Farm Supply**, contact Joshua Brooks, CEA, (806) 259-1621.