AgriLIFE EXTENSION
Texas A&M System

Improving Lives. Improving Texas.

Pest Management News
News About integrated pest management for
producers in Runnels-Tom Green Counties

Richard Minzenmayer
Extension Agent-IPM
613 Hutchins Ave., Room 302
Ballinger, Tx 76821
Phone (325) 365-5212 Fax (365) 365-5212
TPMA Website: http://www.tpma.org

July 25, 2008
Vol. XXI No.11
E-mail: r-minzenmayer@tamu.edu
Website: http://ipm.tamu.edu
Mobile (325) 365-1292
Runnels County Website: http://runnels-tx.tamu.edu

GENERAL SITUATION

HOT DRY conditions continue across the Concho Valley. A significant rainfall event is needed **NOW**. Hopefully hurricane Dolly will make its way to the Concho Valley. Cotton ranges from second week of squaring to 2 NAWF (Nodes Above White Flower). Cotton is receiving 24-25 HU's per day. Corn harvest is fast approaching. Grain sorghum harvest began this week in Runnels County.

COTTON

Fleahopper numbers ranged from 12 to 42 fleahoppers per 100 terminals. All the cotton fields which we are monitoring are well into bloom and square sets are no longer necessary. Bollworm egg counts ranged from 8 to 22 BW eggs per 100 plants with the higher number in irrigated cotton.

Dryland cotton is in a major stress right now due to hot dry conditions and a large boll load. I noticed a number of cotton fields this week going into premature senescence due to moisture stress. The Corpus Christi area is also observing premature senescence in cotton fields. Dr. Dan Fromme (Extension Agronomist) explains Premature Senescence Syndrome in cotton.

"During the past three to four weeks, premature senescence began to be observed in cotton fields between Corpus Christi and Rosenberg. The scenario that appears to favor the onset of premature senescence is very dry conditions during the boll fill period and plants with decent boll load (relatively speaking.) Also, premature senescence can occur under extreme waterlogged conditions during the boll fill period. Symptoms are seen in the upper third of the canopy and are characterized initially as yellowing between the leaf veins followed by a rapid change in leaf tissue to red/orange/bronze coloration. The affected leaves continue to deteriorate, eventually showing brown, necrotic lesions and leaf margins. Generally, secondary foliar pathogens such as Alternaria, Cercospora, and Stemphyllium can be isolated from affected leaf tissue. These are not considered primary pathogens, but they attack these debilitated plants and contribute to premature senescence and defoliation.

The cotton boll is the major sink for potassium (60% of total plant potassium is in the bolls). Adequate potassium is necessary for fiber and seed development. Also, potassium is important for enzyme activation, pH balance, stomatal control and translocation of photosynthates. Both extended dry periods or the onset of late season rains (waterlogged soils) contribute to reduced root functions. The relatively non-functioning root system can't uptake enough potassium to meet boll demand, hence the deficiency. Barren plants and those with very little boll load will generally appear unaffected because their demand for potassium is much less. Potassium requirements for a two bale per acre yield requires approximately 120 pounds throughout the season.

Good Boll Load Senescant Foliage Poor Boll Load Healthy Foliage

Approximately 1/3 or 40 pounds is needed during the boll fill period. In addition, the plant hormone cytokinin is important in regulating senescence and roots are a major site of cytokinin production. As root function decreases, so does the production of cytokinin, which leads to senescence.

Most of the potassium moves to the root by diffusion. Diffusion occurs when an ion moves from an area of high concentration to one of low concentration. As plant roots absorb nutrients from the surrounding soil solution, a diffusion gradient is established. Under low soil moisture conditions, water films around soil particles become depleted and discontinuous, slowing the movement of potassium to the roots, thereby reducing uptake. Under these conditions, plants cannot absorb enough of the nutrient to meet boll demand. Soil compaction will compound the problem by preventing the root from exploring more area in the soil profile.

Research has indicated that this condition can occur even in fields that contain high soil potassium. <u>In-season foliar applications have been evaluated and have proven not to be effective.</u>" Dan Fromme

Cotton aphids are being found on a regular basis in area cotton fields. Beneficial insect populations are high and keeping these infestations in check and, with the forecast of hot temperatures continuing into next week, I think these infestations will remain low. Remember the action threshold for cotton aphids is when populations exceed 50 aphids per leaf.

I think the worst thing we can do is spray a cotton field for aphids that has not reached threshold levels. The neonicotinoid chemistry is our best aphicides and should only be used judiciously. The past couple of years we have had to increase our rates to get acceptable control. So what I am saying is if we misuse these materials by spraying sub-economic infestations, we will lose their effectiveness all together.

Experiments conducted here in 1992 and 1993 showed the cotton plant can tolerate low populations of aphids (<50 aphids/leaf) for an extended period of time without adversely effecting plant development, yield or fiber qualities. The experiments did show that plant height was significantly reduced by aphid populations that exceeded 50 aphids/leaf for three weeks and 100 aphids/leaf for two weeks. Fruit retention was not significantly affected either year but lint and seed yields were significantly reduced by this level of aphids both years. The primary factor responsible for yield reduction in 1993 was reduced boll weight. Our Heaviest aphid populations usually occur during the month of August. So my best advice would be to monitor aphid populations and do not spray until thresholds are reached.

Spider Mites prepared & written by Mary Joe Schronk, IPM Intern for Runnels/Tom Green Counties

Spider mite numbers have increased in the Wall area. The spider mites are concentrated near or adjacent to corn fields.

Adult spider mites are extremely small and have a spherical body shape. They are usually red, but may be green, orange, or straw colored. The mites produce protective webs of silk over infested plant surfaces. Spider mites infest the underside of leaves where they remove the sap from the plant and cause the leaves to discolor. These discolored areas often result in leaf reddening as mite feeding continues. Spider mites may also infest the bracts of squares and bolls and cause them to shed. Infestations usually occur in isolated spots and in field margins. Spider mites cause more damage to cotton plants during hot, dry weather and usually attack cotton in the latter part of the season. As the dry weather continues, cotton fields will need to be monitored closely for this pest.

Spider Mite Action Threshold

Cotton Stage	Action Threshold
Before 1st Bloom	Treat to prevent defoliation
After 1st Bloom	Treat when 50% of the plants show noticeable leaf damage and the mite population is increasing

There are several suggested insecticides for controlling spider mites: Oberon® 2SC @ 6-16 oz./acre; Oberon® 4SC @ 3-8 oz./acre; Comite® @ 6.55E @ 1-2 pts./acre; Comite® II6E @ 1.25-2.25 pts./acre; and Zephyr® 0.15EC @ 4-16 oz./acre and others.

SORGHUM INSECTS

prepared & written by Mary Joe Schronk, IPM Intern for Runnels/Tom Green Counties

Sorghum Midge

Sorghum midge is one of the most damaging insects to grain sorghum. This pest needs to be monitored closely as sorghum begins blooming. The adult sorghum midge is a small red-orange fly with a yellow head, brown antennae and legs, and gray wings. One generation is completed in 14 to 16 days.

Adult life is for only one day. During this period, each female can lay around 50 yellowish-white eggs in flowering spikelets of sorghum. In 2 to 3 days eggs hatch, and larvae complete development in 9 to 11 days. Pupae develop between the spikelet glumes. After the adult emerges, the clear or white pupal skin remains at the tip of the spikelet. Sorghum midges overwinter as larvae in spikelets of sorghum or johnsongrass. When flowering sorghum is available in an area, sorghum midge numbers rise. The abundance increases when flowering times are extended by a range of planting dates or sorghum maturities.

A sorghum midge damages sorghum when the larva feeds on a newly fertilized ovary, preventing normal kernel development. A sorghum grain head infested by sorghum midge usually has normal kernels scattered among non-kernel-bearing spikelets in various proportions.

The best time for scouting sorghum midge is when the temperature warms to approximately 85 degrees F, or between 10am and 2pm. Only sorghum heads with yellow blooms needs to be checked for crawling or flying sorghum midge. Because adult sorghum midges live less than 1 day, a new brood of adults emerges each day. Adult sorghum midges are most abundant along field borders, particularly those downwind of earlier flowering sorghum or johnsongrass.

Sorghum midge threshold can be determined by the following equation:

$$\text{Number of sorghum midges per flowering head} = \frac{\text{(Cost of control as \$ per acre)} \times 33256}{\text{(Value of grain as \$ per cwt)} \times \text{(Number of flowering heads)}}$$

This equation calculates the number of midge per head that would justify treatment by using the total cost of control, value of grain, and number of flowering heads per acre. To determine the number of flowering heads per acre, record the number of flowering heads along a length of row equal to 1/1000 of an acre. For 30 inch rows, this would be 17.4 feet, and 13.1 feet 40 inch rows. Then multiply the number of flowering heads within that distance by 1000.

FORAGE TOUR

This year's Forage Tour will be held at the Glen Halfmann Farm in Miles on Tuesday, July 29 beginning at 9:00 a.m. The program will include a tour of a forage sorghum variety test plot where varieties of forage sorghums and crosses are planted. The program will also feature a tour of a bermuda grass pasture comparing Tifton 85 and Jiggs bermuda varieties. Information on sprigging and planting tops, fertilizing, harvesting and management practices of bermuda grass pastures will be discussed. The Halfmann Farm is located two miles north of Miles on Hwy 67. The Tour is sponsored by Texas AgriLife Extension Service in Runnels and Tom Green Counties and should conclude at 11:30 a.m. For more information on the tour or directions to the Halfmann Farm, please call the Extension Office at 365-2219.

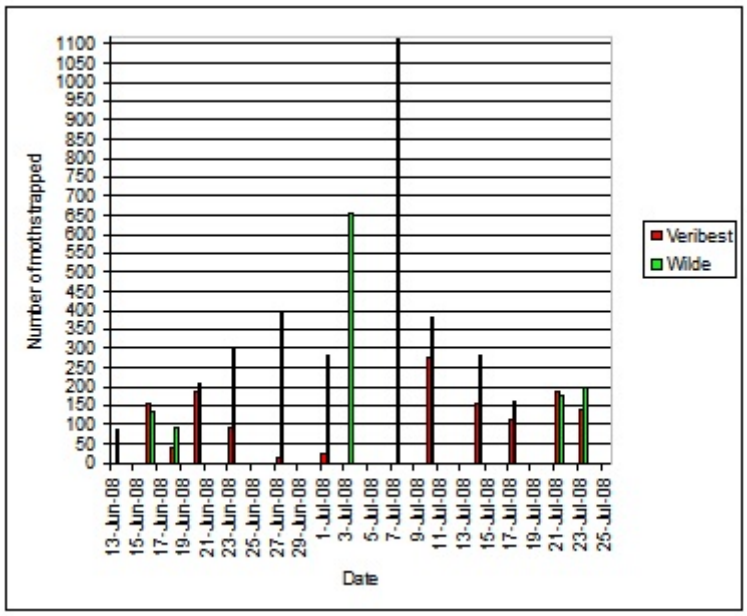
TURNROW MEETINGS NEXT WEEK

Turnrow meetings will be on Tuesday, July 29 at 9:00 a.m. at the Wall Coop and on Wednesday, July 30 at 8:30 a.m. at the Ballinger Feed & Seed.

Wall

Heat Accumulations	2007	2008	2007	2008	2008	Rainfall	
Planting Date	July 9	July 9	July 15	July 15	July 18	February	.71
May 01	1053.4	1395.8	1176.1	1537.6	1612.7	March	5.79
May 15	907.0	1216.1	1029.7	1357.9	1433.0	April	1.78
June 01	712.2	901.3	834.9	1043.1	1118.2	May	.67
June 10	541.8	648.8	664.5	790.6	865.7	June	2.25
June 15	439.2	518.8	561.9	660.6	735.7	July 18	.11

Tom Green Bollworm Moth Trap Graph



Runnels Bollworm/Budworm Moth Trap Graph