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Texas IPM
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AgriLIFE EXTENSION
Texas A&M System

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Gaines County IPM Newsletter

Volume V, No. 3

General Situation

This past weekend's showers brought very little rainfall to Gaines County. We need another good rainfall event soon to keep the dryland fields growing and to replenish our depleted soil moisture. Peanut plants are starting to bloom. Cotton stages range from cotyledon cotton to squaring cotton, with a majority of the cotton in the 4-8 true leaf stage.

We are still picking up a few beet armyworms in non-Bt cotton. However, the survival rate of beet armyworms is really low. Beet armyworms lay their eggs in a mass of 25-75 eggs. The adult moth then covers the eggs with scales from her body (See *Figure 1*). In non-Bt fields, we are only finding one worm per plant, which suggest that 95 to 99% of the worms are dying form natural causes (weather, beneficial insects, low humidity, cannibalism).

Figure 1. Beet armyworm egg mass

We are also picking up stink bug eggs and a few beneficial insects (mainly spiders and big-eyed bugs). Other than that insect pressure has been relatively light this week.

Figure 2. Stinkbug eggs

Figure 3. Big-eyed bug. Photo by Bart Drees

Conversely, nematodes are starting to cause significant damage to the root system in some cotton fields and concerns of weed resistance/ tolerance continues to be a hot topic.

Southern root-knot nematode

Root-knot nematodes have started to take their toll on cotton. We have observed stunting associated with root-knot nematode infestations. *Figure 4* shows the roots of a stunted plant and several nematode galls on the root. In comparison, *Figure 5* is a healthy cotton root. It is easy to see why nematodes can jeopardize yields and why nematode management should be a top priority.

We highly recommend the use of tolerant/ resistant varieties (PHY 367WRF, ST 5458B2RF, ST 4288B2RF, or DP 174RF) in fields with a history of nematode damage. Nematode damage is likely to be less severe when you plant one of these varieties because the plant's resistance limits nematode reproduction. You may still see some nematode damage in fields that were planted to one of these varieties, however, the damage on these varieties is likely to be less severe than if the field had been planted to a susceptible variety. If you are seeing nematode damage, then the thing to do at this point would be to give those plants all they need in order to reduce the amount of stress on the plants.

Figure 4. Root-knot nematode galls on cotton roots

Figure 5. Healthy Roots of a Cotton Plant

Concerns About Possible Weed Resistance/Tolerance…What to look for in your field

The days of getting by with a glyphosate only weed management system are long behind us. We have to start using a wide diversity of weed management tactics, such as, residual herbicides, burn down herbicides, plowing, hoeing, hand removal, etc…

Just because you have been diligent about using a variety of weed management tactics in your fields, doesn't mean that you will not have any issues show up in your fields. This has to be a community wide effort because pollen can travel in the wind.

Most of the time, resistance will start in a small area of the field (usually an irregularly shaped patch of a single weed species). Resistance can be brought about through back-to-back applications of glyphosate year after year. If a single plant becomes resistant to the herbicide and reproduces, then its seed can be scattered forming a small patch of resistant weeds. One pigweed can produce 150,000 to 200,000 seed.

If you have applied glyphosate twice at a lethal rate and the pigweed is not dying, but the other weeds within that area are dying, then this indicates that there is not a sprayer/coverage issue, instead you may have pigweed that is showing signs of resistance to glyphosate. Immediate action should be taken to remove these weeds (hoeing, plowing, hand removal) in order to prevent them from reproducing. Additionally, we highly recommend the application of a residual herbicide at this time to prevent more pigweed from emerging. Your herbicide program from this point forward should include herbicides with multiple modes of action and mechanical weed control.

Below are pictures from two fields that we are monitoring to determine if resistance is developing.

Figure 6. The producer applied yellow herbicides in a band at planting. After emergence he applied glyphosate and had several pigweed that showed signs of resistance to glyphosate. Notice how effective the yellow herbicide banded application was in preventing weed emergence within the row. These weeds are not resistant to yellow herbicides. Just think about how clean the field would have been if he had done a broadcast application of the yellow herbicide.

Figure 7. This field had several pigweeds (Palmer amaranth) that died from the glyphosate application, however, there were also several weeds that were slightly damaged from the glyphosate and other weeds that are still actively growing. We would expect to see this type of segregation of the weeds in a field where resistance is developing.

Figure 8. Since there were some misses when glyphosate was applied, the producer decide to use a different weed management tool…cold hard steal.

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Figure 9. This producer did not apply any yellow herbicides. He has applied 3 applications of glyphsates this year. The weeds are not actively growing, but they are not dead.

Figure 10. The pigweeds are yellow, which indicates that there was glyphosate taken up into the plants, however, the glyphosate did not kill the plants.

Proper Application and Proper Incorporation of Pre-Plant Yellow Herbicides

Keep in mind that yellow herbicides work effectively but they can also be damaging to crops if they are not incorporated properly and applied at the correct rates.

Figure 12. **The tractor that was applying the yellow herbicide slowed down as he was approaching the edge of the field causing the yellow herbicide to be applied at a higher rate, which resulted in a poor stand of cotton.**

Figure 13. **Damaged Cotton Roots**

Rhizobium Nodulation in Peanuts

Below is a table that can be used to rate your nodulation levels at 5 to 6 weeks after planting. If early nodulation is good, you can expect it to continue to increase toward peak nodulation (usually August), but if early nodulation is poor it probably isn't going to improve. Minimal or nonexistent *Rhizobium* nodulation points toward the need for supplemental nitrogen to achieve desired yields.

Table 1. **Early season *Rhizobium* nodulation rating for peanuts.**

Nodules per Plant	Early Season Nodulation Rating	Management Consideration
More than 20	Excellent	This field will likely have excellent late-season nodulation. Therefore, a response from supplemental (mid-season) nitrogen is doubtful.
16 to 20	Very Good	Late-Season nodulation should also be strong. Therefore, you should reduce your mid-season nitrogen application.
11 to 15	Good	Will produce a good crop but may consider some reduction in your mid-season nitrogen application.
6 to 10	Fair	We would like to see higher nodulation than this. Therefore, a mid-season nitrogen application is a good bet.
Less than 5	Poor	These nodules may be from Rhizobium that are not specific for peanuts. A mid-season nitrogen application is essential. Try to determine why the nodulation was poor in this field.

If you would like to become a sponsor of the 2012 Gaines County TPMA Scouting Program, please contact Manda Anderson at 432-788-0800 or by email at mganderson@ag.tamu.edu. Thank You!

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