

## GAINES COUNTY IPM NEWSLETTER

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### **General Situation**

The irrigated cotton and peanut crops have put on significant growth during the last week. Cotton stages range from 2 true leaves to 13 true leaves. The earlier planted fields should start blooming next week. More peanut fields have started to bloom and some fields have started to peg.

Last weekend rains were a blessing for the irrigated cotton crops. The county received between 1.5 to 4 inches of rain. However, some fields were hit with hail and the dryland fields may be caught up in the dilemma of late emerging cotton.

We found a few bollworm eggs and damaged squares in non-Bt cotton this week. However, for the most part cotton and peanut fields are insect free. Lygus counts remain low in the safflower fields that we are monitoring.

### **Plant Growth Regulator Use in Cotton**

Several growers have started applying or are considering applying mepiquat-based (Pix, Mepex, Mepichlor, Mepiquat Chloride, Mepex GinOut, Stance, and others) plant growth regulators (PGRs). Mepiquate chloride (MC) reduces production of gibberellic acid in plant cells that in turn reduces cell expansion, ultimately resulting in shorter internode length. MC will not help the plants compensate for earlier weather or disease damage by increasing growth rate. It may under good growing conditions increase fruit retention, control growth and promote earliness. MC should not be applied if crop is under any stresses including moisture; weather; insect or nematode damage; disease stress; herbicide injury; or fertility stress. Applications must begin no earlier than 50% matchhead square. It is best to get a handle on excessive growth potential early if conditions favor excessive growth for an extended period of time. Herein lies the High Plains dilemma: It is unknown at this time as to how weather will affect the crop in July. We may get 100+ degree temperatures, southwest winds at 30 mph at 10% relative humidity. If so, those conditions will limit plant growth in many fields with low irrigation capacity.

Growers should target applications to fields with high growth potential. Some picker varieties may need aggressive management under high irrigation capacity and or if heavy rainfall conditions are encountered. Visit with your seed company representative to determine which new varieties should be watched closely for plant growth regulator needs under field-specific conditions.

The information on Mepiquate-based Plant Growth Regulator Use was reported by Randy Boman in the July 14, 2008 Focus on South Plains Agriculture Newsletter, which can be found on the web at [http://lubbock.tamu.edu/focus/Focus2008/July\\_14/July\\_14.pdf](http://lubbock.tamu.edu/focus/Focus2008/July_14/July_14.pdf).

### **Rhizobium Nodulation in Peanuts**

Some peanut fields have a low level of *Rhizobium* nodulation. Growers who have a low level of *Rhizobium* nodulation may need to apply supplemental nitrogen. Below is information from the

Growers should check their taproot *Rhizobium* nodulation. Use a shovel to dig plants from different rows and field locations. If nodulation is deemed poor, nothing can be done to increase nodulation in the current crop. In West Texas 20 to 25% of fields annually may be undernodulated, or worse have only a few nodules per plant. Poor *Rhizobium* nodulation calls for supplemental nitrogen to achieve desired yield potential.

Active nodules are pink to dark red inside. If nodules are white inside they are not yet active-check again in 7 to 10 days. Nodules no longer active are black, gray, and may be mushy (you will see a few of these nodules starting in late July). Nodules which never turn pink or red inside are from soil *Rhizobium* that may not be specific for peanuts. You need to differentiate these types of nodules, which are usually on the lateral roots. Versus the mass of “supernodulation” on the taproot, which is evidence that your inoculant worked.

For West Texas, the following guideline rates nodulation levels 5 to 6 weeks after planting. We are particularly interested in any developing clusters of nodules on the taproot. If early nodulation is good you can expect it to continue to increase toward peak nodulation (usually early August), but if early nodulation is poor it probably isn’t going to improve.

If a producer intends to apply 80 lbs of nitrogen per acre mid-season, but early signs suggest that nodulation is very good, then this producer may want to reduce his target nitrogen application by as much as 50%. It has been well documented that high levels of early season nitrogen, or even moderate levels as low as 30 lbs nitrogen per acre can reduce nodulation in a peanut crop. Higher mid-season nitrogen levels also can curtail *Rhizobium* nitrogen production as the plants are ‘lazy’ and take fertilizer nitrogen instead of fostering the desired relationship with the bacteria to give you ‘free’ nitrogen. See the table below for evaluating nodulation and use of supplemental nitrogen.

Table 1. Evaluation of nodulation and use of supplemental (mid-season) nitrogen

<b>Nodules per Plant</b>	<b>Early Season Nodulation Rating</b>	<b>Management Consideration</b>
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 <i>Rhizobium</i> that are not specific for peanuts. A mid-season nitrogen application is essential. Try to determine why the nodulation was poor in this field.

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