

WEST
PLAINS
IPM
UPDATE

News about
Integrated Pest
Management in
Hockley, Cochran,
and Lamb Counties
from
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Pest and Crop Update

Cotton has generally been growing off much better the past couple of weeks with much warmer temperatures and some occasional rain. The rain this last weekend was a God send for most. Believe it or not we have fields at or very close to bloom stage or will be blooming in the next week or so. This is a great milestone physiologically to achieve before mid-July, as it gives us a full month then to bloom and set bolls. Most fields are in the 3 to 7 first position squares, and it will still be another two to three weeks before those will see blooms present. With the current growing conditions many fields are candidates for plant growth regulators. Also, many fields are indicating that they will bloom with 9 nodes above white flower. Not a problem if we could guarantee a great fall. However, I personally would rather see 7-8 nodes above white flower going into bloom. Not too much horsepower to overshoot the target but enough to get there and mature it out with quality. So, if you do not have any PGR in your cotton consider having 24 to 32 ounces of a mepiquat chloride product before peak bloom. On [page 3](#) see a more in-depth discussion of PGR's.

Pest wise we are not concerned so much with fleahoppers once we move into bloom stage cotton. Still watch some young cotton that we need to protect those squares. In general, fleahoppers have let up this week. I would keep an eye out for plant bugs like Lygus and stink bugs (which have been reported). Also, scout for aphids and larva pests like cotton bollworm. I am not saying just on conventional cotton either. We must scout technology cotton as well. For more information on these pests go to: <https://lubbock.tamu.edu/files/2019/04/ENTO-075-2019.pdf>

I know many received varied amounts of rain, just do not overestimate how long it lasts. Irrigation is critical at this stage for cotton to progress at a pattern mentioned above and so that it matures out properly. To wait could only cause late growth which will possibly have maturity issues. Also, get your fertilizers out ASAP. Don't wait till the end of the month.

Grain sorghum producers should know that sugarcane aphids have been found in both Hale and Lubbock counties.

Peanuts have continued to be a bright spot with rapid development of flowers, peg and no pods. We are in the time frame in which a preventative fungicide application should be considered for maximum protection from disease and meeting yield goals. I have not detected leaf spot yet but anticipate this anytime. On the [next page](#) is a discussion of pod rots.

Management of Peanut Pod Rots

By Jason Woodard, Former State Peanut Specialist

It is time to consider preventative applications for soilborne diseases. Two different fungi (*Rhizoctonia solani* and *Pythium spp.*) are the primary components of the pod rot complex. These fungi may occur alone but are often found together. Positive disease identification is necessary to ensure maximum economic returns for chemical applications. Subtle differences between symptoms caused by the two can be observed. *Pythium* infections may include blackened decay with a greasy appearance (See [Figure 1](#)); whereas, *Rhizoctonia* infections may have more of a dry-textured appearance (See [Figure 2](#)). Laboratory confirmation is often required for a complete diagnosis.

Preventative fungicide applications are generally administered 60 to 90 days after planting; however, early initial applications may result in the need for an additional application late in the season if conducive environmental conditions persist. Several factors must be considered when applying pod rot fungicides:



Figure 1. Symptoms of *Pythium* pod rot

1. Growth Stage - Applications made before the formation of pegs and development of pods may limit the amount of product that is ultimately deposited in the pegging zone. Therefore, it is important to monitor peg development and delay applications accordingly.

2. Pathogen Pressure - The identification of which pod rot pathogen you are dealing with will dictate fungicide selection.

3. Fungicide Selection - Pod rot fungicides with activity against **Rhizoctonia** consist primarily of Abound, Artisan, and Convoy. Other fungicides such as Folicur (and other generic formulations of tebuconazole) and Provost are labeled for *Rhizoctonia* pod rot; however, their labels specify that applications are made in a 4-block regime (that is more congruent with practices in the Southeastern US). Additional fungicides are labeled for use against *Rhizoctonia*; however, efficacy data of these products is limited. Fungicide options for **Pythium** are limited to Ridomil (several formulations including a liquid and a granule are available), and Abound (suppression only, at the maximum label rate of 24.5 fl oz/A).

4. Application Method - The activity of these products can be increased substantially when applied via chemigation; however, the banding of initial applications is often more cost effective. Broadcast applications result in fungicide treating bare ground which may be wasteful. Increasing carrier volumes (>20 gallons per acre) will improve deposition into the lower canopy, especially when applying liquid Ridomil formulations (as that product binds very quickly to the leaf). Administering irrigation soon after fungicide applications will also help to redistribute fungicides deposited on the foliage and increase concentrations delivered to the pegging zone.



Figure 2. Symptoms of *Rhizoctonia* pod rot

Cotton Plant Growth Regulators

The use of plant growth regulators (PGRs) in cotton is sometimes like reinventing the wheel on an annual basis. However, it should not be that difficult or confusing if you understand what PGRs CAN and CANNOT do. I have heard PGRs referred to as:

- ⊙ “Sunlight/heat units in a jug”
- ⊙ “Stress in a can”
- ⊙ “A jug of PGR is best used as a door stop”
- ⊙ “PGRs help balance vegetative and reproductive growth”
- ⊙ “PGRs helps tip the balance towards reproductive growth”
- ⊙ “Using PGR’s is like riding the brakes when the accelerator is stuck wide open on irrigation and fertility”
- ⊙ “PGRs make everything better just like bacon!”



PGRs are Mepiquat-based (Pix Plus, Mepex, Mepichlor, Mepiquat Chloride, Mepex GinOut, Stance, and others). PGRs have been available for many years. Came of age in the late 80’s. Dr. James Supak did much of the original work here. Companies are constantly enhancing formulations. The main active ingredient in nearly all these products is mepiquat chloride.

What can PGRs do and not do?

- ⊙ Mepiquat 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.
- ⊙ It does not increase growth rate but essentially reduces plant size by reducing cellular expansion.
- ⊙ It may, under good growing conditions, increase fruit retention, control growth and promote earliness.

Mepiquat chloride (MC) should not be applied if crop is under any stresses including moisture; weather; severe spider mite, insect, or nematode damage; disease stress; herbicide injury including herbicide damage (for example 2,4-D, dicamba, etc.) due to drift or from tank contamination; or fertility stress. Original MC, like Pix, basically simulated a stress on the plant, which in turn can result in the natural response of reproductive growth. Back then the stress from the MC combined with other natural stresses could result in fruit loss/shed, particularly at rates above 8oz. More recently Boron/borate helps soften this MC stress.

Results from replicated testing indicates that a 5 to 20% reduction in plant height (compared to the control) can be obtained from 16 oz of 4.2% a.i. MC material applied in up to 4 sequential 4-oz/acre applications starting at match head square (MHS) and ending at early bloom. It is generally possible to reduce about one node from the growth of the main stem, which can result in about 3-5 days earlier cutout. Low rate multiple

applications beginning at MHS have generally provided more growth control than later higher rate applications made at first bloom or later. Research trials have shown that statistically significant increases in yields are not generally obtained, but excellent growth control is consistently provided. Many times, we don't see a lot of differences in performance of these products with respect to growth control.

Consistent yield increases have not been observed from any of the MC materials we have investigated. A good boll load will normally help control plant growth. Fields with poor early-season fruit retention, excellent soil moisture, and high nitrogen fertility status may be candidates for poor vegetative/fruiting balance and should be watched carefully. Growers who have planted varieties with vigorous growth potential and have fields with excellent growing conditions may need to consider PGR application.

Determination of application rates is generally more "art" than "science" for these products. Applications should begin when 50% of the plants have one or more matchhead squares (see specific product label for more information). FYI, most MC products have a maximum of 48 oz/ac per season (22 oz on Stance). It is



best to manage high growth potential early if conditions favor excessive growth for an extended period of time. Here is the dilemma: It is unknown at that early period of time as to how weather will affect the crop in July and into August. If 100+ degree temperatures with southwest winds at 30 mph and 10% relative humidity are encountered, those conditions will limit plant growth in many fields with low irrigation capacity. Watch high growth potential varieties and fruit retention. If a high growth potential variety has been planted and has low fruit retention, then MC rate should begin early and be increased, especially under high water, fertility, and good growth conditions.

My Recommendations for Cotton PGRs:

- ⊙ On varieties which are known to have vigorous growth patterns start at pinhead square with 8 oz of MC. Watch compatibility.
- ⊙ 7-10 days later another 16 oz of MC.
- ⊙ Have a total of **24 oz** of MC **prior to 1st bloom**.
- ⊙ Then as plant responds to irrigation, rain, fertility, H.U., apply MC as needed.
- ⊙ Under normal conditions I usually recommend a 16 to 24 oz MC application at peak bloom (5 NAWF) on vigorous varieties.
- ⊙ These are general guidelines; there are always unique situations in cotton fields, so call if questions.

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