

# WEST PLAINS IPM UPDATE

News about  
Integrated Pest  
Management in  
Hockley,  
Cochran, and  
Lamb Counties  
from  
Kerry Siders

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## CURRENT SITUATION

**Cotton** ranges from just germinated to 8 true leaf cotton. This wide range is reflective of the mess we have been in across a large area here on the West Plains. I cannot review all the scenarios which have played out over the last 5 to 6 weeks during planting. Just suffice to say that it has been a real struggle to get cotton up, and then to keep a stand. We missed some critical general rains to help with uniform emergence. I know there are still many uncertainties in this current planted crop. To hopefully aid in some of these decisions here is the link to the Hailout-Replant-Late Plant Guide: <https://lubbock.tamu.edu/files/2019/06/Hailout-Replant-LatePlant-Guide-TX-S-Plains-Trostle-Maeda-2019-TOC-1.pdf>

Scouting this week has found very little insect issues. This is one benefit from the relentless wind and heat. We are now concentrating our efforts on monitoring square development, retention, and detection of any fleahoppers or other plant bugs which might cause losses. Here is the Cotton Insect Management Guide; go to page 10 for managing fleahoppers: <https://lubbock.tamu.edu/files/2019/04/ENTO-075-2019.pdf>

Weed control is all over the board. Unfortunately, this is a field by field prescription situation now in terms of what type of tillage you plan on using in-season, weeds present, the size of those weeds, and available equipment. I must say that although pigweed is resistant to glyphosate (Roundup), glyphosate is still very effective against many and most all other weed species. I am seeing way more Johnsongrass, silverleaf nightshade, woollyleaf bursage, Texas blueweed, and many others which Roundup is still very effective on. If you get some rain and the humidity comes back for a few days utilize Liberty when you can. Also, if you have depleted your Xtendimax, Engenia, or FeXapan products you should consider Tavium. Tavium is a premix of Xtendimax plus metalachlor.

**Peanuts** are generally doing well, with many fields starting to bloom. Peanut producers need to do their best at maintaining a moist environment in-canopy to promote blooms to pollinate and subsequently form pegs/pods. In evaluating many fields for nodule formation, I have found it difficult to find many fields with more than an average of 5 nodules per plant. A plant requires 15 or more nodules per plant to fix sufficient nitrogen. Because of this low nodulation we must plan on compensating with additional fertilizer applications.

# Cotton Plant Growth Regulators

This may not seem like the year one would even consider a PGR (plant growth regulator). However, a year like this we might consider the PGR's as a tool to manage a shorter season or to keep us on track for "earliness". 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"

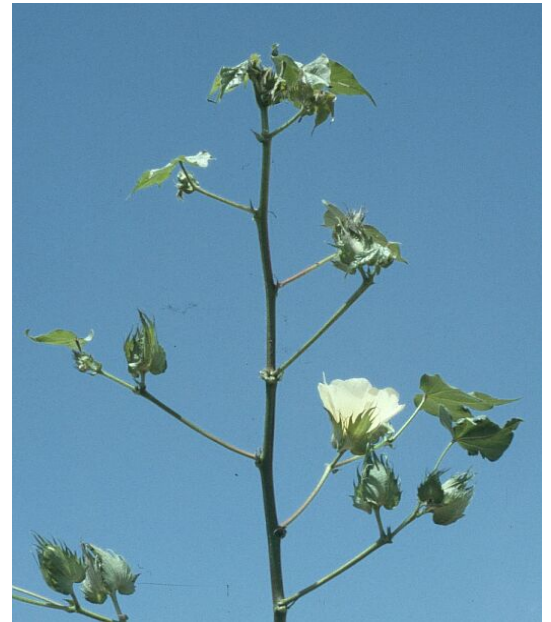
"A jug of PGR is best used as a door stop"

"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 do not 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/fruitlet 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 4-8 oz of MC (Pentia something which has boron). Watch compatibility.
- ⦿ 7-10 days later another 4-8 oz of MC.
- ⦿ Have a total of **16 oz** of MC **prior to 1<sup>st</sup> bloom** by applying low multiple applications.
- ⦿ Then as plant responds to irrigation, rain, fertility, H.U., apply MC as needed.
- ⦿ Under normal conditions I usually recommend a 16 oz MC (Pentia) application at peak bloom (5 NAWF) on vigorous varieties.

***West Plains IPM Update*** is a publication of the Texas A&M AgriLife Extension Service IPM Program in Hockley, Cochran, and Lamb Counties.

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