



High Plains Cotton Harvest Aid Update October 8, 2004

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As of this writing, the South Plains has received considerable rainfall over most areas. Reports of 15+ inches of have been noted. This has resulted in difficult conditions for most cotton producers in the region. Over the last several years, we have been fortunate that this level of rainfall has not occurred. Recent projections of High Plains crop yields have indicated that we have a record-sized crop out there. Cooler than normal August/September temperatures have caused a significant delay in crop maturity in some areas, particularly north of Lubbock. The lateness of the crop in some areas has two effects. Due to the fact that we have fewer bolls open in early October than in past seasons, we may not have as much grade degradation as we might expect. Many fields have not opened due to cooler, wetter conditions, and this might cause some concerns over fiber maturity. It is difficult to estimate how much quality reduction may have occurred across the region. However, based on a cotton weathering project conducted over a 3-year period, it very likely that we have reduced color grades and may now have an increased bark contamination potential. Only time and harvest will tell.

Producers should be paying close attention to boll maturity in their fields. Some fields may be reasonably mature, and be ready for application of boll opening harvest aid materials (the ethephon based types). We are now entering the phase of the growing season where long-term average daily cotton heat unit accumulations are nearing zero. We are now around three weeks away from the average first freeze date for Lubbock. Producers should take note of the overall heat unit situation and consider applications of ethephon based materials. Prep, Superboll, Boll'd, Ethephon 6, Finish 6 Pro are all 6 lb/gallon ethephon materials. CottonQuik contains 2.28 lb/gallon of ethephon. These materials need at least 2-3 days of sunshine and warm conditions (highs around 70 or so) for reasonable activity. The mode of action of ethephon is such that a fairly active plant is necessary to convert the harvest aid chemical to ethylene, a senescence hormone. The higher ethylene level triggered by ethephon application causes a chain of events to occur which ultimately leads to abscission layer formation in the bolls, thus causing boll opening. Good application coverage is essential, as ethephon should be applied to unopened bolls. Due to recent price reductions of ethephon materials, higher rates can be applied at more reasonable cost. Rates of around 1.1 to 1.5 pounds active

ingredient/acre of ethephon may be necessary due to the current crop conditions. This is equivalent to 24-32 ounces/acre of 6-lb/gallon material. The higher rates should be used under cooler conditions. The higher rates of ethephon should also provide some defoliation. Ethephon products at adequate rates generally open all bolls, however, some immature bolls which lack maturity (low micronaire) may not properly “fluff.” It is likely that treated fields will make more pounds of lint than those not treated - if an early freeze is obtained. A follow-up treatment of Gramoxone Max (paraquat) will most likely be required to sufficiently condition the crop for stripper harvest if a freeze is not encountered.

Another factor that should be considered is secondary growth (“regrowth”) potential after recent rainfall events. Although we cannot predict the weather, it is likely that we may see secondary growth problems in many fields if a warming trend is encountered. This will likely be difficult to control and desiccate. Some fields could potentially end up with all bolls open and leaves dropped, but have enough secondary growth to cause potential harvesting challenges. Basal “regrowth” (bottom of the plant) is generally not the primary concern. Terminal “regrowth” (top of the plant) is typically more of a problem. Reducing the aggressiveness of stripper rolls in the row units can help reduce the amount of secondary growth stripped off the plants during harvesting operations. One option producers might consider is tank mixing Ginstar and ethephon based materials. Due to the current conditions, a minimum rate of 6.4 oz/acre of Ginstar is required, and will be expensive. This should help defoliate the plants, as well as provide at least some measure of “regrowth” control. If significant secondary growth is encountered, then producers may have to make follow-up applications of 16-21 oz/acre of Gramoxone Max (3 lb/gallon paraquat). If these applications are made, then at least 0.5% to 1% of non-ionic surfactant must be included with the paraquat. Applications of paraquat made late in the day have a greater likelihood of desiccating secondary growth.

For late maturing cotton, an application of 6.7-10.7 oz Gramoxone Max/acre may be enough to start a “drydown” of the crop. The higher rates may cause leaf stick. This may result in more open bolls if a freeze is later obtained. For more information on this consult your local Syngenta representative.

For more information refer to the 2004 High Plains and Northern Rolling Plains Cotton Harvest-Aid Guide available at: <http://lubbock.tamu.edu>