



Assessing Late-Season Hail-Damaged Fields

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A lot of interest has been generated concerning the use of harvest aids on badly hail-damaged cotton fields. This is a very difficult decision. Any time this occurs, depending upon the level of defoliation and boll maturity, low micronaire should be expected. Low gin turnout and bark contamination are also very likely. Kerry Siders, Extension Agent-IPM for Hockley and Cochran counties conducted a harvest aid trial on hail-damaged cotton in 1999. These data indicate that some higher yields were noted from some ethephon and paraquat treatments. The final hand-harvested yield in this project ranged from about 250-435 lb/acre. To obtain a copy of this Result Demonstration Report, go to <http://lubbock.tamu.edu> and then go to the Focus on Entomology Newsletter dated September 16. Working with some of our Extension Agriculture and IPM agents, we will be initiating a few trials on cotton with varying levels of hail damage/defoliation over the next week. We hope to have a better database to handle this situation the next time it arises.

I suggest that producers go to the fields and sample several areas. Cut whole plants from a few row feet (keep track of how many row-ft) and pull all bolls from the plants. Start out with a single pile. Then get a very sharp knife or razor box cutter (BE CAREFUL – you might want to wear a thick leather glove on the hand holding the bolls) and start cutting bolls. Perform a cross-section slice through the center of each boll. Bolls that are very easily sliced and have poorly developed cotyledons in the seed, or which have gelatinous centers in the seeds are probably not going to produce harvestable lint when a harvest aid is applied. Put all of these bolls in one pile – the “doomed pile.” Then if a boll has well-formed cotyledons, yet has a whitish seed coat, put it into another pile (these are what I call the “iffy” ones). However, if the boll has very good seedcoat color from tan to brown, it is considered mature. If you end up with 12-15 mature bolls per row-ft in 40-inch rows, then it is likely going to produce about a bale per acre of yield (for many High Plains stripper types). For more information on differing boll sizes and row spacings, go to the Web site noted above and see the August 29 issue of Focus on Entomology and see the section on Estimating Lint Yields. I generally categorize bolls with badly damaged locks into the “doomed pile” as

these may not properly open anyway. The number of “iffy” bolls may contribute to final yield, but remember, these will likely be low micronaire, and may not “fluff” properly when forced open by a harvest aid product.

The producer should consider the options at hand. Those can be categorized into two areas:

1. Do nothing and leave the field to the freeze and harvest the cotton that opens. This may be the best option for some producers, after the yield level and the maturity of the field are assessed. Many late planted fields may have few bolls that could even be considered for harvest aid treatment. Based on potential insurance payments and the yield coverage, doing nothing may not be a wrong answer. With this option, no more money is spent on the crop, and harvesting after the freeze and taking what’s left to the gin may actually result in a better financial position after insurance payments are considered.

2. Apply harvest aid materials and get the crop out. Once this decision has been made, the choice of what harvest aid product to use can then be addressed. How much can a producer afford to spend on a harvest aid for this hailed-on crop? Generally speaking, if a lot of “mature bolls” exist, then an ethephon based “boll opener” product (e.g. Prep, Finish 6 Pro, SuperBoll, Boll’d, Ethephon 6, etc.) is probably a good selection, as this will open most mature or near mature bolls quickly if good temperatures are encountered after application. Coverage will be important. Do a thorough application job and make sure the bolls get the ethephon. A follow-up application of Gramoxone Max (paraquat) may be necessary to complete crop dry-down for proper stripping. A two-stage application of Gramoxone Max may also be effective, if only a few bolls are immature. If the field had considerable open bolls, Gramoxone Max may be the cheapest route to take, but this product may “freeze” some immature bolls. If substantial leaves remain on the plants, then a defoliant such as Ginstar may be added, although it will significantly increase the cost. The addition of Ginstar may also reduce regrowth potential. The one thing to consider is the fact that if temperatures stay warm, and the plants have plenty of moisture, then expect the regrowth potential to be high. This juvenile tissue will likely be hard to kill, even with high rates of Gramoxone Max. If regrowth is encountered, if possible reduce the aggressiveness of the stripper rolls in order to not “gather up” the regrowth (for more information refer to the 2003 High Plains Cotton Harvest Aid Guide also available at the above noted Web site). Ginning the cotton quickly will probably help grade-wise, and may be a necessity if the harvested cotton contains a lot of fruiting branches, green bolls, mainstems, leaves, or other foreign material. Coordinate with your ginner to make sure they can “get the job done.”