PRE- AND POST-HARVEST WEED MANAGEMENT IN COTTON

What You’ll Learn...

- Pre- and post-harvest weed control are both critical components of an overall weed seed management strategy.
- Fields should be scouted before and after harvest and weeds should be controlled until temperatures are low enough to limit germination.
- Weeds present at harvest can potentially reduce fiber quality and interfere with harvest efficiency.
- Achieving and maintaining post-harvest weed control can decrease weed pressure and help reduce costs associated with field preparations in the spring.

Pre-Harvest Weed Management

Weeds present at cotton harvest can potentially reduce fiber quality and interfere with harvest efficiency. Weeds found in harvested lint can increase the trash content rating and may stain the fibers. If green weed material is in cotton modules, the potential for overheating, rot, and spreading of lint stain may increase. Fields heavily infested with vining weeds, such as morningglory, can interfere with the operation of harvesting equipment.

Applying certain herbicides pre-harvest may not only help control weeds, but also 1) help desiccate the cotton plants to stop regrowth, 2) defoliate cotton leaves, and 3) better prepare the crop for harvest. Weeds should be managed throughout the growing season to maximize yield potential and help reduce harvest problems due to weed escapes or late-emerging weed populations.

Pre-Harvest Herbicide Options

Pre-harvest herbicide applications must be made according to the herbicide label, with special attention made to any pre-harvest interval listed.

Pre-harvest applications of Roundup® brand glyphosate-only agricultural herbicides may be applied to Genuity® Roundup Ready® Flex cotton up to 7 days before harvest at rates up to 44 fl oz/acre. When applying Roundup brand glyphosate-only agricultural herbicides to non-glyphosate resistant cotton, applications should not be made before a sufficient amount of bolls have developed for desired yield. For more difficult to control perennial weed species, apply Roundup brand glyphosate-only agricultural herbicides after defoliating cotton.

Gramoxone® brand herbicides may also be applied preharvest to help with weed management after defoliation. Gramoxone brand herbicides may be applied at 1 to 2 pts/acre. Apply with a 0.25% volume/volume non-ionic surfactant (1 pt/100 gallon of spray mix). This application should be made when 75 to 80% of the bolls are open with remaining bolls mature.1

Aim® EC herbicide may also be applied pre-harvest to aid in defoliation, desiccation, and weed management. This product is especially effective on morningglory.2

Aim EC may be applied at 1.0 to 1.6 fl oz/acre. Apply with a non-ionic surfactant or crop oil concentrate. A pre-harvest application of Aim EC should be made when 60 to 70% of the bolls are open.

The herbicide/defoliant ET® X may also be applied pre-harvest. ET X may be applied at 0.9 to 1.7 fl oz/acre. ET X should be applied when approximately 60% of the bolls are mature.

For the best results, all pre-harvest applications require thorough plant coverage. Repeated applications may be needed for dense canopies or to completely manage weeds. Refer to product labels for maximum application rates, seasonal use rates, sprayer volumes, and tank mix partners.

Post-Harvest Weed Management

After harvest, there can be many months of good weather conditions for weed growth, making post harvest a critical time to manage all weeds, especially those that are resistant to certain herbicides. Controlling weeds post harvest can help spread out the workload prior to planting and reduce weed seed production.

Fields should be scouted after harvest and weeds should be controlled until temperatures are low enough to limit germination. The main goal of the selected strategy is to prevent weed seed production.3 Weed control strategies can include:

- Shredding of crop residue to create a mulch, especially after harvest of corn or grain sorghum.
- Application of a non-selective herbicide to control emerged weeds.
- Application of a residual herbicide to prevent weeds from emerging.
- Multiple tillage operations (disking, chisel plow, etc.) may be late in the fall for control of small weeds.4

Note: Post-harvest tillage may move new weed seed

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towards the soil surface and encourage germination. Tillage equipment should be cleaned to prevent the spread of weed seed.

**Post-Harvest Herbicide Options and Considerations**

Several herbicide options are available to provide post-harvest weed control. A non-selective herbicide may be used post-harvest to kill field vegetation. When glyphosate-resistant weeds are present, Gramoxone® brand herbicides may be used for management of emerged weeds. For the most consistent control, it is best to apply herbicides prior to weeds attaining a height of 4 inches.

To broaden and lengthen weed management, a contact herbicide, such as Gramoxone brand herbicides, may be tankmixed with an herbicide with residual activity. Refer to product labels for tank mix partners. Residual herbicide selection is critical since some products may remain active in the soil influencing the following crop. Herbicide labels should be checked for plant-back and rotational crop restrictions. Post-harvest herbicide options are provided in Table I.

It is important to allow for regrowth of weeds to occur before herbicide applications are made. Fields with weeds that set seed in the fall may have dramatically higher weed populations during the next growing season.

Controlling weed populations post harvest can help reduce weed populations from year-to-year and allow for more efficient use of herbicides and cultural practices during the growing season.

**Table 1. Herbicide options for post-harvest weed management. Refer to product labels for specific instructions.**

<table>
<thead>
<tr>
<th>Post-harvest Herbicide Options</th>
<th>Crops Safe for Spring Planting</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>No restrictions</td>
<td>90 days until sufficiently dissipated.</td>
</tr>
<tr>
<td>Atrazine</td>
<td>Following crop: corn</td>
<td>May only be applied to corn or soybean stubble. Some formulations are not labeled for fall application, check label.</td>
</tr>
<tr>
<td>Dicamba</td>
<td>Following crop: corn, grain sorghum, dicamba-tolerant soybean, dicamba-tolerant cotton</td>
<td>Plant back restrictions need to be followed, especially when applied prior to cotton that is not tolerant to dicamba. Avoid potential drift to cotton and soybean (products that are not tolerant to dicamba) and follow any state regulations.</td>
</tr>
<tr>
<td>Diuron</td>
<td>Following crop: corn, cotton, or sorghum</td>
<td>Depending on the formulation and rate, soybean may be planted the following year. Refer to specific product labels.</td>
</tr>
<tr>
<td>Goal® 2XL</td>
<td>Following crop: cotton, soybean</td>
<td>Prior to planting, treated fallow beds should be tilled at least 2.5 inches.</td>
</tr>
<tr>
<td>Metribuzin</td>
<td>Following crop: soybean, waiting period for other crops</td>
<td>High rates may require a soybean waiting period. Refer to product label for rates depending on the soil type/pH.</td>
</tr>
<tr>
<td>Simazine</td>
<td>Following crop: corn</td>
<td>For preemergence control of winter annual weeds.</td>
</tr>
<tr>
<td>Valor® EZ</td>
<td>No restrictions</td>
<td>Post-harvest applications only in no-till and minimum-till fields. 30-day plant back to wheat.</td>
</tr>
</tbody>
</table>