

Replant Options following Corn Pre-Emergence Herbicide Applications

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Bad weather and excessive rainfall have many growers facing re-plant decisions. We have received many questions on re-plant options in fields where pre-emergence herbicides were applied to corn. There are two primary issues to address. The first issue is, what do I do about the existing or surviving corn? The second issue is, what crops can I replant at this point if I have already applied a pre-emergence corn herbicide?

1. Killing a poor corn stand for replant purposes

It is not desirable to have plants of drastically different sizes growing in a field for yield and management purposes. Uneven plant stages can allow crop plants to act as weeds. What are your best options for controlling the poor stand of corn to replant corn?

One possibility is to cultivate to destroy the earlier crop. This can work effectively for any type of corn, but waiting for dry enough conditions to work the soil may not be desirable.

A second possibility is to use herbicides to kill the existing stand. If corn in the poor stand is a conventional or LibertyLink hybrid, then glyphosate is the best herbicide option. However, if the corn is a Roundup Ready hybrid, killing the poor stand becomes more complicated.

There are three chemical options to control Roundup Ready corn, but each has some drawbacks. Select Max (clethodim) is slow acting but very effective at controlling a poor stand for a replant scenario (e.g., it will kill all the plants remaining). The drawback is a 6 day waiting period between herbicide application and replanting. If the waiting period is ignored, the replanted corn may be stunted.

Liberty (glufosinate) and Gramoxone (paraquat) can also be used. Neither has soil residual activity that delays planting. However, both options have been inconsistent in trials conducted at UNL. Immediately after spraying these herbicides, the corn will look ill. But unless conditions are just right (warm, humid, and the plants large enough for the growing point to be killed), the plants will often survive the application and send up

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new leaves. Gramoxone activity may be enhanced by tank-mixing it with atrazine or metribuzin. If Liberty is used, be sure to add AMS to maximize effectiveness.

2. Replant crop options when a corn pre-emergence herbicide has been applied

The logical replant options at this point in the growing season are a short season corn hybrid, a slightly shorter maturity soybean variety or grain sorghum. Depending on the pre-emergence herbicide used in corn, it may not be possible to replant to any crop except corn. Table 1 lists corn, grain sorghum and soybeans replant intervals for some of the more common pre-plant and pre-emergence corn herbicides.

Corn: Corn can be replanted at any point, unless Select has been used to kill the existing stand (see point 1). In most instances, producers can then use the post-emergence program they had initially intended on for subsequent weed control this year.

Soybeans: If atrazine has been applied pre-plant or pre-emergence soybeans should not be planted in that field until next year. This is clearly stated on the label of any herbicide that contains atrazine, regardless of the rate used. Given the time of year, from a practical standpoint some producers may try to replant soybeans where lower rates of atrazine were applied. The producer assumes all crop injury risk in this scenario since this is prohibited by the label. Consider the following points if this is attempted:

- Replanting soybeans where atrazine has been applied and the soil pH is above 7 will likely result in severe injury. Atrazine persistence in the soil increases when the pH is above 7.
- Using tillage to dilute the atrazine concentration in the soil may be beneficial. The emerging soybean plant will not encounter areas of high atrazine concentrations.
- Avoid the use of metribuzin containing herbicides (Sencor and others) for weed control in these re-planted soybeans. Soybean injury potential increases when atrazine residues are present and metribuzin is used.

Sorghum: There is more flexibility when replanting sorghum where corn pre-emergence herbicides have been used.

Replanting sorghum where common corn pre-emergence herbicides containing atrazine, dimethenamid-P (Outlook), or S-metolachlor (Dual II Magnum, Bicep II Magnum, Cinch, etc) were applied should present no problems. If products containing acetochlor (Breakfree, Degree, Keystone, etc) were applied, replanting sorghum is not allowed according to product labels. Consult Table 1 for details.

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If Lumax or Callisto were applied pre-emergence in corn, replanting sorghum should cause few if any issues, as both products were labeled for pre-emergence applications in grain sorghum in 2008. Lumax or Callisto can cause some bleaching or whitening of the emerging and young sorghum seedlings. However, this generally occurs only when the products are applied within 7 days of planting. Our experience has shown that the bleached sorghum grows out of these symptoms quickly and develops normally with little to no impact on yield. If Lumax or Callisto were applied to the intended corn several weeks ago, there is little potential for injury to replanted sorghum.

In conclusion, this article has provided some general guidelines to consider. Producers should consult the valuable information on the label of the product(s) they have applied this spring for specific details and directions.

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TABLE 1. Replant Intervals for some Common Corn Pre-Emergence Herbicides

Common Corn PRE Herbicides	Corn Label Replant Interval		
	Field Corn	Grain Sorghum	Soybean
Aatrex	AT	AT	NCS
Balance PRO	AT	6 months	6 months
Basis	AT	10 months	15 days to 10 months (check rate)
Bicep II Magnum	AT	AT (safened seed)	NCS
Bicep Lite II Magnum	AT	AT (safened seed)	NCS
Breakfree	AT	NCS	NCS
Breakfree ATZ	AT	NCS	NCS
Breakfree ATZ Lite	AT	NCS	NCS
Bullet	NCS	NCS	NCS
Callisto	AT	NCS*	NCS
Define	AT	12 months	AT
Degree	AT	NCS	NCS
Degree Xtra	AT	NCS*	NCS
Dual II Magnum	AT	AT	AT
Field Master	AT	NCS	NCS
FulTime	AT	NCS	NCS
G-Max Lite	AT	AT	NCS
Guardman	AT	AT	NCS
Guardman Max	AT	AT	NCS
Harness	AT	NCS	NCS
Harness Xtra	AT	NCS	NCS
Hornet WDG	AT	12 months	10.5-18 months (rainfall dependant)
Intro	NCS	NCS	NCS
Keystone	AT	NCS	NCS
Keystone LA	AT	NCS	NCS
Lexar	AT	NCS	NCS
Lumax	AT	NCS*	NCS
Me-Too-Lachlor II	AT	NCS	NCS
Outlook	AT	AT	AT
Python	AT	12 months	AT
Radius	AT	12 months	6 months
Ready Master ATZ	AT	AT	NCS
Stalwart	AT	NCS	NCS
Stalwart Xtra	AT	NCS	NCS
Steadfast	AT	10-18 months (pH)	15 days
Steadfast ATZ	AT	10 months	10 months
SureStart	AT	NCS	NCS

AT = Any Time

NCS = Next Cropping Season

* = there are now labels for preplant or preemergence application to sorghum

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