

## COVER CROP TERMINATION WITH HERBICIDES

Cover crops have become a topic of interest among row crop producers because of their contribution to sustainable agriculture through a reduction in soil erosion and improvement of soil quality and nutritive value. Cover crops are grown for these benefits rather than for a harvested product such as seed or forage. For cover crops to be most beneficial and manageable, however, they must be terminated properly before planting the following production crop.

The [Education Store–Purdue Univ. Extension](#) has informative articles on the culture and management of cover crops. One such article is entitled “[Successful Cover Crop Termination with Herbicides](#)“ authored by Travis Legleiter, Bill Johnson, Tom Jordan, and Kevin Gibson. Notice the word “successful” in the article title. This is an important management component when using cover crops since many cover crop species have the potential to become weeds if they are not completely controlled before planting the following production crop.

Using herbicides to kill cover crops in the spring is probably the most popular method of control, especially in minimum- or no-till production systems where tillage will negate the benefits from their use. In the above article, the authors list the following points that should be considered when selecting herbicides to kill cover crops.

**Cover crop species.** [The Midwest Cover Crops Council](#) provides a list of major categories of cover crops, which includes grasses, broadleaves, and brassicas. The various species in each category that will be controlled by individual herbicides will be listed on the label of those herbicides. Using selective herbicides (grass or broadleaf) vs. combinations of herbicide classes will depend on the cover crop species or combination of species present.

**Cover crop growth stage.** Effective control of cover crop species with herbicides will likely depend on the growth stage and/or height of the cover crop at time of termination. Consult the herbicide label for control guidelines based on controlled species’ plant growth stage/height and the amount of product that will be required based on these parameters.

**Other weed species present.** One of the reasons for growing cover crops during the off-season between production crops is the intended suppression of winter weeds. However, many of these weed species may still be present in a poor cover crop stand or if the cover crop is damaged by winterkill. Therefore, the herbicide chosen to terminate the cover crop must also be active against weed populations that may result from these unintended conditions.

**Crop to be planted following the cover crop.** The herbicide chosen to terminate a cover crop must be compatible with the following crop; i.e., use only those herbicides that are labeled for burndown or preplant applications prior to the following production crop. Check herbicide labels for plantback restrictions and waiting periods that should be considered based on the following crop. Table 1 of the above linked article has a list of herbicides often used for cover crop termination along with their restrictions for use with a following crop.

**Weather conditions at time of herbicide application.** Be aware that low temperatures that

occur during the time of cover crop termination with herbicides may slow the kill time of these herbicides.

**Type of herbicide used.** If only contact herbicides are used to terminate cover crops, then the complete coverage of the foliage that is required for maximum effectiveness will often be difficult because of the different plant sizes in mixed cover crop stands. If translocated herbicides are used, then the above-mentioned cold temperatures will affect the rate of kill.

There are two other important points that should be considered in addition to those listed above.

- The first point is covered in a [blog](#) on this website. The take-home message from that article is this: Both 2,4-D and dicamba have been used for fall and spring weed management for some time, and it is likely that one of these auxin herbicides will also be used to terminate a cover crop. With the new Enlist and Xtend systems for crops that extend the use window of 2,4-D and dicamba, respectively, into the summer, the potential overuse of these two herbicides will most certainly hasten selection for resistance in targeted weeds. Therefore, cover crop termination with herbicides that have MOA's different from that of these auxin herbicides will prolong the effectiveness of these new technologies that are now available for POST weed control in soybeans. Thus, terminating cover crops with herbicides should consider the MOA of the burndown herbicide used for this purpose to ensure that it is different from that of herbicides that will be applied pre- or post-emergence to the following production crop. This adds another layer of concern in the fight against the selection for weeds that are resistant to herbicides.
- The second point is this: If termination of a cover crop by herbicides is planned, then cover crop species should be chosen with that in mind because some species such as annual ryegrass can quickly become persistent weeds in the following crop if not completely killed in the spring. Alternative species such as cereal rye, oats, and many broadleaves may be more readily controlled by burndown herbicides. Thus, the threat of their becoming potential weed problems in the following production crop is minimized.

The benefits of a cover crop can be lost or negated if cover crops are not properly killed with the applied herbicides, or if termination herbicides are chosen without regard for their MOA as it relates to the total herbicide program for both the cover crop and the following production crop.

Be mindful that there are other acceptable methods besides herbicides for terminating a cover crop. Click [here](#) for an article that contains that information.

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