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Terminating Cover Crops - What's Your Plan?

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Terminating Cover Crops - What's Your Plan?

Abstract
Take time now to get a plan in place for terminating a cover crop. Whether termination will be done with a herbicide, rolling/crimping, or tillage, it is important to know not just the advantages, but also the limitations with a termination method. Regardless of termination choice, it is important to have a plan in place to minimize problems this spring.

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Take time now to get a plan in place for terminating a cover crop. It is important to know not just the advantages, but also the limitations with a termination method.
Overwinter cover crops, like cereal rye, will need to be terminated this spring.  
*Photo by Meaghan Anderson*

**Herbicides**  
The effectiveness of a herbicide at terminating a cover crop depends primarily on three things:

1. the cover crop species and growth stage;
2. the herbicide and rate used;
3. the environment.

Some species, like cereal rye and hairy vetch, are easily-controlled with appropriate herbicide treatments. Winter wheat, annual ryegrass, and red clover can be more difficult to kill. Cover crops often have a dense canopy of rapidly maturing plants in the spring. That, combined with the typically cool temperatures of April and May, leaves opportunity for control failures with herbicides.

Contact herbicides available to control cover crops include paraquat and glufosinate. Paraquat seems to be the most consistent contact herbicide. Contact herbicides only affect the parts of the plant they come into contact with, making them most effective on small, annual plants. Overwintering cover crops may not be well-controlled with early applications of contact herbicides; this could be because the plants are already too large or growing too quickly and because of a less-than-ideal environment. Complete coverage with a contact herbicide may be more difficult with a mixed cover crop stand due to the species being different in size and shape, resulting in inconsistent control. Increasing
spray volume to a minimum of 20 GPA can help improve coverage when encountering dense canopies.

Translocated herbicides, like glyphosate, move to the plant's growing points so complete plant coverage is less of a concern than with contact herbicides. Due to the highly variable environmental conditions typical of spring, a 1 lb acid equivalent rate of glyphosate is recommended. This could be anywhere from 28 fl oz to 42 fl oz, depending on your formulation of choice. Glyphosate formulations may contain from 3 to 4.5 lb acid equivalent per gallon; the concentration of a formulation is listed below the ingredient statement on the first page of the label. Be sure to check your product of choice to determine the appropriate rate. The most effective herbicide applications will be made on a sunny day when temperatures are above 60°F, plants are actively growing, and nighttime temperatures stay above 40°F.

Glyphosate formulations vary on the need for spray additives such as surfactants. Always follow label recommendations for additives for the most consistent control. The addition of residual herbicides, liquid fertilizers, or other adjuvants may decrease the effectiveness of the herbicide. You may consider increasing herbicide rate and spray volume if tank-mixing, if dealing with larger and more mature cover crops, or if applications are made at cooler than ideal temperatures.

Waiting to terminate until after your crop is planted, especially in non-GMO crops, can be very risky. Options become more limited and the cover crop can quickly become an uncontrollable weed. It is better to be safe than sorry. Iowa State University researchers generally recommend terminating the cover crop with herbicide 10 -14 days prior to planting corn to protect yield; however, that time frame is less critical for soybeans. Check with your crop insurance agent for their cover crop termination requirements prior to planting corn or soybeans.

Always look at the herbicide labels for directions and any restrictions for the subsequent crop. A quick and easy place to look up herbicide labels is www.cdms.net. Directions for finding information on this website are located here.

**Rolling/Crimping**
Rolling or roller-crimping is an alternative termination method that reduces dependency on herbicides during corn and soybean production. Effective termination with this method is dependent upon the proper timing of the crimping for the cover crop species present. For cereal rye, it is recommended to wait until the rye has shed pollen to get a consistent kill with a roller/crimper. A cover crop mix makes efficient control more complicated since the species can be at different growth stages, at the same time.

Examples of cover crops that can be controlled with rolling/crimping include: hairy vetch (at full bloom), barley, triticale, or cereal rye (all at milk or dough stage).

**Tillage**
Tillage is an option but may fit better into some operations than others. Multiple tillage passes may be necessary to terminate the cover crop, which can negate the benefits the cover crop is providing to soil health and could result in erosion. Some species, like clovers, will be more difficult to manage with tillage alone.

Regardless of termination choice, it is important to have a plan in place to minimize problems this spring. Following cover crop termination, be sure to check fields for regrowth or skipped areas that need further attention. This will allow for a successful cover crop termination, and, hopefully, a successful cropping season this summer.

**Additional Resources for Terminating Cover Crops**

- ICM Article: Terminating Cover Crops
- ICM Article: Research Shows Extra Cover Crop Growth Prior to Soybeans Provides Benefits
- ICM Article: Cereal Rye Cover Crops, Allelopathy and Corn
- Cover Crop Termination, IPM University of Illinois
- Cover Crop Termination, University of Wisconsin Extension
- Successful Cover Crop Termination with Herbicides, Purdue Extension

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