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Terminating Cover Crops

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Terminating Cover Crops

Abstract

There is an increased interest in the use of cover crops due to the many agronomic and environmental benefits they offer. An important consideration when incorporating cover crops into the system is their termination. Failure to completely control cover crops at planting results in them acting as a weed and competing with the crop. Several factors influence the effectiveness of burndown treatments, including the cover crop species and growth stage, the herbicides and rates used, application parameters and environment.

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Terminating Cover Crops

By Bob Hartzler, Department of Agronomy

There is an increased interest in the use of cover crops due to the many agronomic and environmental benefits they offer. An important consideration when incorporating cover crops into the system is their termination. Failure to completely control cover crops at planting results in them acting as a weed and competing with the crop. Several factors influence the effectiveness of burndown treatments, including the cover crop species and growth stage, the herbicides and rates used, application parameters and environment.

Research in Missouri has shown that cereal rye and hairy vetch are usually consistently controlled with appropriate treatments, whereas winter wheat, annual ryegrass and red clover can be more difficult to kill.

As with controlling weeds, cover crops are easier to kill early in the spring while they are small. They become progressively more difficult to kill as they approach reproductive stages. The Roundup PowerMax label states better performance is achieved when applied before the boot stage of cereal rye. Increasing the herbicide rate and the spray volume to improve coverage will improve the consistency of control when dealing with large, mature cover crops.

Temperatures tend to fluctuate widely during the cover crop termination period and can lead to variable results. Spraying when temperatures favor active plant growth minimizes problems; however, abnormally cold nights (<40° F) may reduce activity even when favorable temperatures (>60° F) occur during the day.

Glyphosate is the standard herbicide used for terminating cover crops. Glyphosate is recommended at 0.63 lb a.e./A (18 oz Roundup PowerMax) for cereal rye 16 inches or less in height, and at higher rates for larger rye. Tank-mixing other herbicides with glyphosate may reduce the activity of glyphosate. Control of cereal rye with glyphosate was reduced up to 50% when tank-mixed with atrazine or Canopy, whereas 2,4-D, dicamba or Sharpen had little or no effect on rye control (K. Bradley, Univ. Missouri). The antagonism observed with tank-mixes was greater with late applications than applications made to small rye.

Unfortunately, we have a limited ability to access the susceptibility of cover crops to burndown treatments. The most consistent control will be achieved with applications made in early spring while cover crops are small and actively growing. Avoid spraying in the early morning or evening during periods with less than optimum temperatures. The glyphosate label provides great flexibility in application rate. While the Roundup PowerMax label states an 18 oz rate for cereal rye, this rate should only be used under ideal conditions. Increase the rate when tank-mixing with other products, with larger rye, or when applications are made during cool periods.

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