

Rye Cover Crop Termination

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The early, rapid growth of winter rye in the springtime can be challenging to manage before planting corn. There are different methods of terminating the rye cover crop. It can be killed 2 or more weeks before no-till corn establishment, incorporated by tillage, or harvested for forage.

Tilling rye when it is less than 12 inches tall is a good way to terminate the stand. Plowing or disking rye after it is over 20 inches tall ties up soil nitrogen, takes moisture from the soil and is sometimes difficult to incorporate into the soil.

Herbicides are often used to terminate rye prior to planting no-till corn. Many corn growers are concerned about the allelopathic effect of the killed cereal rye on the corn crop. Allelopathy is defined as the release of chemicals by one plant that inhibits the growth of adjacent plants. Research suggests that it does not have much effect on corn due to its seed size and planting depth. If there are any concerns about the potential negative impact on corn, kill the rye 10 to 14 days before planting, at planting or within 5 days after planting corn.

In no-till corn, glyphosate is the preferred product of choice for burning down cereal rye. Gramoxone SL 2.0, paraquat, can also be used to burndown cereal rye before planting corn. Remember, paraquat is a non-selective, contact herbicide and will require good spray coverage for optimum control of the rye. Glyphosate is a translocated, non-selective herbicide that is less dependent on spray coverage. Air temperature before, during and after glyphosate application can also influence control. Cold nights (<40°F) will reduce glyphosate activity, especially when followed by cool (<55°F) days. Cool weather (below 55°F) will slow the activity of Gramoxone SL 2.0, as will cloudy, overcast weather, but will not affect performance.

The glyphosate rate will depend on the stage of growth of the rye at the time of application. However, in most cases it is only necessary to use the .75 acid equivalent rate of glyphosate. Glyphosate formulations will contain 3 to 5 pounds acid equivalent per gallon. The acid equivalent amount is found on the label by the ingredient statement section. Depending on the formulation you choose, the rate will be between 19 and 32 ounces per acre. With glyphosate, include appropriate adjuvants (if required) plus spray grade ammonium sulfate (AMS) at 8.5 to 17 lbs/100 gallons of water.

Gramoxone SL 2.0 applied at 3 to 4 pints per acre and works well on smaller rye before it reaches the boot stage. Add a nonionic surfactant to the spray tank to enhance penetration and total kill. If you will be planting corn and choose to use Gramoxone SL 2.0, consider adding 1 quart of atrazine per acre to improve control of the rye. In 2009, research by Bill Curran at Penn State University, found that the additional of 1 quart of atrazine per acre, when used with Gramoxone, provided 99% control of 8-10 inch tall rye. Only 70% control of the rye was achieved when Gramoxone was used alone in this study.

The EPA has recently made changes to the paraquat labels requiring paraquat specific training and restricting the use of paraquat to certified applicators only. Any applicator that will be applying Gramoxone SL 2.0 or a generic paraquat this season must review the new paraquat applicator requirements to make sure they are in compliance. If an applicator is using a paraquat herbicide with the new, updated label they must complete a mandatory training program once every three years. If the current label of the paraquat product being used does not have this requirement, training will not be required. For more information about the new paraquat applicator training visit <https://www.epa.gov/pesticide-worker-safety/paraquat-dichloride-training-certified-applicators>

Every grower with crop insurance must follow the Natural Resources Conservation Service's cover crop termination guidelines. Growers are encouraged to contact their insurance agent if there is any question regarding the cover crop termination requirements prior to planting corn or soybeans.

