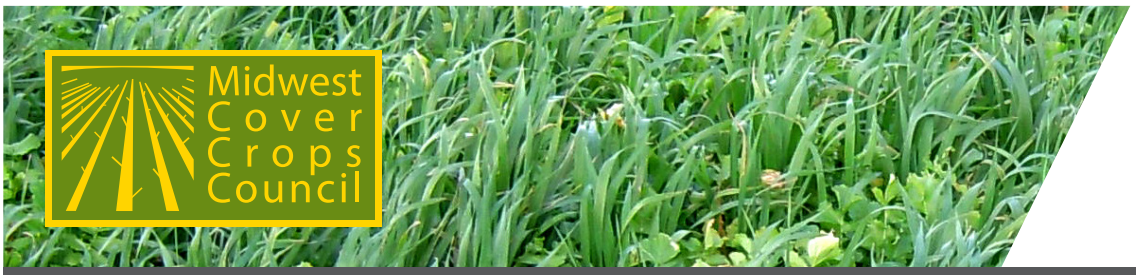

Midwest Cover Crops Council

Iowa State University Extension and Outreach

# IOWA COVER CROP RECIPE

MCCC-122
CROP 3166

# Post Corn Silage, Going to Soybean: Use Cereal Rye

*This publication is intended to provide a starting point for farmers who are new to growing cover crops. With experience, farmers may fine-tune the use of cover crops for their systems.*

## Introduction

The following recipe provides an introductory approach to integrating a cover crop into a corn silage–soybean rotation. The early harvest of corn silage provides an extended planting window for establishing a cereal rye cover crop.

## Planning and Preparation

- *Planning*—Read about cover crops. Go to field days. Start small. Be timely. Prioritize management based on purpose and objectives. Arrange for equipment, custom operators, or additional labor as needed.
- *Corn hybrid and planting*—If possible, plant preceding corn silage crop early, and use a hybrid within the adapted maturity range for your location.
- *Residual corn herbicides*—Cereal rye can be planted in the fall and produce a successful stand following most spring-applied residual corn herbicides. If cereal rye is grazed or harvested for forage, there are some time-interval restrictions. (See Resources.)
- *Seed purchase*—Pre-order cereal rye seed in early summer. Named rye varieties can produce substantially more growth and have predictable development, but they are usually more expensive than variety not stated (VNS) seed. Use good quality seed that has been cleaned, tested for germination and weed seed contamination, and purchased from a reputable seed dealer.

## Fall Work

- *Corn silage harvest*—Prioritize harvest of fields where cereal rye is to be planted.
- *Tillage or no-tillage*—Generally, it is easier to integrate cover crops into no-till or strip-till systems. If tillage is necessary to smooth the seed bed after corn silage harvest, it should take place as soon as possible and prior to rye seeding.
- *Timing of planting*—Ideally, plant cereal rye as soon as possible after silage harvest. Plant no later than the following dates: October 21 in northern Iowa, October 28 in central Iowa, and November 7 in southern Iowa.
- *Seeding rate*—Use 55 lbs./acre for drilled seed and 60 lbs./acre for shallow incorporation. Seed should have a germination rate greater than 85%.
- *Planting method*—Drill to a depth of 0.75–1.50 inches or broadcast with shallow incorporation to 1.50 inches.

## Spring Work

- *Termination timing*—Terminate the cereal rye in spring when plants are 6 to 12 inches tall and actively growing or at least 10 days before planting soybean—whichever comes first. Although this termination timing is recommended for beginners, generally it is not as critical before soybeans as it is before corn. Check current crop insurance rules regarding timing of termination of cover crops. (See Resources.)
- *Termination herbicide*—Cereal rye can typically be terminated with a full rate of glyphosate (1 lb. acid equivalent/acre) after the rye begins growing in the spring. Use best management practices for glyphosate to improve effectiveness. Glyphosate will kill rye more quickly if the rye is rapidly growing and temperatures are greater than 55°F during the day and greater than 40°F at night. Rye sprayed during cooler weather can be more difficult to kill, may require higher glyphosate rates, or will die more slowly.
- *Termination modifications for wet weather*—In a wet or windy spring, be ready to take advantage of any break in the weather and/or use low axle weight sprayers.

Figure 1: This cereal rye cover crop, shown here in early May, was planted the previous fall following corn silage on a research farm near Ames, Iowa. (Tom Kaspar)

- *Option to harvest cereal rye as a silage crop*—A rye cover crop planted in the fall and harvested at boot stage can provide a substantial amount of good quality forage. However, waiting for cereal rye to reach the boot stage (mid-May to early June) will delay planting of the next soybean crop. If the following soybean crop will be insured, then rye should be terminated and soybean planted before the crop insurance late-planting deadline. (See Resources.)
- *Soybean planting*—Almost all modern row planters and drills are fully capable of planting soybean into a dead cereal rye cover crop. Planter adjustments are usually needed to ensure correct planting depth and seed furrow closure.
- *Scouting after planting*—Scout for soybean emergence, population, and insect pests. Additionally, scout for weeds because substantial cereal rye residue often can delay emergence of annual weeds, which may then delay the application of post-emergence herbicides.

## Resources

**Cover Crop Selector Tool**, http://mccc.msu.edu/selector-tool/—available from Midwest Cover Crops Council, www.mccc.msu.edu

**Effect of residual herbicides on cover crop establishment** (Iowa State Extension and Outreach Integrated Crop Management Encyclopedia Article)—available at https://crops.extension.iastate.edu/effect-residual-herbicides-cover-crop-establishment

***Herbicide Use May Restrict Grazing Options for Cover Crops*** (Iowa State Extension and Outreach publication CROP 3082, revised January 2017)—available at https://store.extension.iastate.edu/Product/Herbicide-use-may-restrict-grazing-options-for-cover-crops

***NRCS Cover Crop Termination Guidelines*** (version 4, June 2019)—available from the USDA Natural Resources Conservation Service, https://www.rma.usda.gov/en/Topics/Cover-Crops

***Planting Winter Rye after Corn Silage: Managing for Forage***, J. Stute, K. Shelley, D. Mueller, and T. Wood. 2009. https://ipcm.wisc.edu/download/pubsNM/Rye_090507_final.pdf

***Cover Crop Management*** (Iowa Agronomy Technical Note 38)—available from the USDA Natural Resources Conservation Service, https://efotg.sc.egov.usda.gov/references/public/IA/Cover_Crop_Management_38_AGR_TN_2018_08.pdf

***Post Soybean, Going to Corn: Use Oats*** (Iowa Cover Crop Recipe series, MCCC-104), http://mccc.msu.edu/iowa-cover-crop-recipe-post-soybean-going-corn-use-oats/

***Post Corn, Going to Soybean: Use Cereal Rye*** (Iowa Cover Crop Recipe series, MCCC-103), http://mccc.msu.edu/iowa-cover-crop-recipe-post-corn-going-soybean-use-cereal-rye/

## Authors

**Tom Kaspar**, USDA-ARS (retired); and **Mark Licht**, Iowa State University *(Note: This publication was adapted with consent from MCCC under a joint project to produce customized introductory guidance about cover crops for all member states/provinces.)*

## Reviewers and Contributors

**Stefan Gailans**, Practical Farmers of Iowa; **Michael Henderson** and **Kevin Kuhn**, USDA-NRCS; **Eileen Kladivko**, Purdue University; **Keith Kohler**, USDA-ARS; **Anna Morrow**, Midwest Cover Crops Council; and **Matt Ruark**, **Kevin Shelley**, and **Dan Smith**, University of Wisconsin-Madison

## Acknowledgments

This publication was developed with contributions and collaboration from:

The Midwest Cover Crops Council (www.mccc.msu.edu) aims to facilitate widespread adoption of cover crops throughout the Midwest by providing educational/outreach resources and programs, conducting new research, and communicating about cover crops to the public.

*Funding for this project was provided by McKnight Foundation.*

MCKNIGHT FOUNDATION

March 2020