



# MICHIGAN COVER CROP RECIPE

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## 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.

### Planning and Preparation

- **Planning**—Educate yourself. Start small. Be timely. Prioritize management based on your purpose and objectives. If you intend to use cereal rye as a forage in the spring, refer to *Recommended Hay and Pasture Forages for Michigan* for management recommendations. (See Resources.)
- **Soil testing**—Get your soil tested at least once every three years, and follow recommendations.
- **Corn hybrid and planting**—If possible, plant the 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 to be grazed or harvested for forage, there are some herbicide time-interval restrictions. (See *Weed Control Guide for Field Crops* in Resources.)
- **Seed purchase**—Order cereal rye seed by early summer. Named rye varieties can produce substantially more growth and have predictable development, but they are usually more expensive than VNS (variety not stated) seed. Use good quality seed from a reputable seed dealer.

### Fall Work

- **Corn silage harvest**—Harvest fields where cereal rye is to be planted as early as possible.
- **Fall manure**—It generally works best to plant cover crops following manure application via injection or surface application and incorporation. Manure can also

be injected with a low-disturbance applicator after the rye cover crop is at least 4 inches tall. Other application methods into or onto established cereal rye may result in significant damage.

- **Field preparation**—Cover crops can be integrated into all tillage systems. If tillage is necessary after corn silage harvest, it should take place prior to rye seeding.
- **Timing of planting**—Plant cereal rye as soon as possible after corn harvest and at least two weeks before the average hard frost date (28°F). If planting later than mid-October, consider increasing the seeding rate.
- **Seeding rate**—Seed at a rate of 40–60 lb./acre (assuming a germination rate of 85% or greater). Seeding rates should be increased by 10% if broadcasting with incorporation and by 20% if broadcasting only.
- **Planting method**—Drill to a depth of 0.75–1.50 inches or broadcast with shallow incorporation to less than 1.50 inches. These two methods produce the most consistent stands. Aerial and other broadcast seeding are also options and can facilitate earlier establishment into standing corn with some risk. Overly wet or dry conditions after aerial/broadcast seeding may limit success. Harvest should be planned within two weeks of seeding.
- **Other fall operations**—Surface applying potassium (K) or lime before the ground freezes will not harm cover crops under normal soil moisture conditions, although some damage may occur in the wheel tracks.

### Spring Work

- **Termination timing**—Terminate the cereal rye in the spring when plants are 6 to 12 inches tall and actively growing or at least 10 days before planting soybeans—whichever comes first. In a wet or windy spring, be ready to take advantage of any break in the weather and/or use low axle weight sprayers. Be familiar with the rules related to termination timing and crop insurance. (See *NRCS Cover Crop Termination Guidelines* in Resources.)



Figure 1. This cereal rye cover crop was planted after a corn silage harvest. (Kim Cassida)

- Termination methods**—Cereal rye can easily be terminated with a full rate of glyphosate (1.13 lb. acid equivalent/acre) after the rye begins growing in the spring. Use best management practices for glyphosate to improve effectiveness. Effectiveness and rapidity of termination improves if rye is rapidly growing and air temperatures are consistently warmer (> 50°F). Cereal rye can also be terminated by tillage, although multiple passes may be necessary. Larger rye, rye past the boot stage, or rye sprayed during cooler weather can be more difficult to kill, may die more slowly, and could tie up available nitrogen (N), which is not likely a problem for soybeans as they receive nitrogen through symbiotic fixation. (See Cover Crop Termination in Resources.)
- Option to harvest or graze cereal rye as a forage crop**—Some growers may be interested in harvesting or grazing cereal rye as an additional forage crop. Growing cereal rye for forage requires a different management system. (See *Recommended Hay and Pasture Forages for Michigan* in Resources.) Make sure all herbicide rules are followed. Using cereal rye as a forage crop may delay the planting date for the next soybean crop.
- Soybean planting**—Proper planter adjustment and maintenance is critical to achieve success when planting into cover crop residue. When planting no-till, modern planter setups can handle planting into grass cover crop biomass. Row cleaner attachments can sometimes be beneficial to increase soil warming but may plug with cover crop residue if not set up properly. Check planting depth and seed furrow closure shortly after beginning to plant and adjust as needed.
- Scouting after planting**—Scout for soybean emergence, population, and insect pests after planting. Additionally, scout for weeds because substantial rye residue may delay emergence of annual weeds, which may then delay the application of post-emergence herbicides. (See *2020 Weed Control Guide for Field Crops* in Resources.)

**Resources**

**Cover Crop Selector Tool**, <http://mccc.msu.edu/selector-tool/> — available from Midwest Cover Crops Council, [www.mccc.msu.edu](http://www.mccc.msu.edu)

**Recommended Hay and Pasture Forages for Michigan** (Michigan State University Extension publication E-3309), <https://forage.msu.edu/wp-content/uploads/2019/11/E3309-RecommendedHayPastureForagesForMichigan-2019.pdf>

**Weed Control Guide for Field Crops** (Michigan State University Extension publication E-0434), <https://www.canr.msu.edu/weeds/extension/>

**NRCS Cover Crop Termination Guidelines**—available from the USDA–National Resources Conservation Service, <https://www.rma.usda.gov/en/Topics/Cover-Crops>

**Cover Crop Termination** (Michigan State University Extension website), [https://www.canr.msu.edu/cover\\_crops/getting\\_started\\_and\\_management/termination](https://www.canr.msu.edu/cover_crops/getting_started_and_management/termination)

**Cover Crops, Manure, and Nitrogen Management** (University of Wisconsin–Madison Extension publication A4178), <https://learningstore.extension.wisc.edu/products/cover-crops-manure-and-nitrogen-management>

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The Midwest Cover Crops Council ([www.mccc.msu.edu](http://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.

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