



NEBRASKA COVER CROP RECIPE

MCCC-108
G2315

Post Soybean, Going to Corn: Use a Mix of Oats/Wheat/Rapeseed or Wheat Only

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 soybean-corn rotation. Often the easiest place to begin is to plant a cover crop ahead of a soybean cash crop following corn, so consider starting with the companion recipe titled *Post Corn, Going to Soybean* (publication MCCC-107; see Resources).

Planning and Preparation

- **Planning**—Educate yourself. Learn the pros and cons of cover crops through reading, attending field days and conferences, and talking with farmers who have used cover crops successfully. Start small. Be timely. Prioritize management based on your goal for using cover crops.
- **Soybean variety and planting**—If possible, plant the preceding soybean crop early and use an early maturity soybean cultivar. One strategy is to use your earliest-maturity-group soybeans on the fields where you plan to seed cover crops and plant those beans first.
- **Residual soybean herbicides**—Because oats/wheat are very tolerant of most soybean residual herbicides, few restrictions apply unless grazing is being considered. Rapeseed planted in this cover crop mix may be affected by residual soybean herbicides. Chlorimuron (Classic®, Canopy®, Cloak®, etc.), imazethapyr (Pursuit®), and fomesafen (Reflex®, etc.) could be a problem for fall-seeded legume or mustard covers.
- **Seed purchase**—Order cover crop seed early. Named oat and rapeseed varieties grow well but are more expensive than VNS (variety not stated) seed. Start with VNS seed with a good germination rate that has been cleaned, tested for germination, and has a seed tag even though it is VNS. North of Highway 30 or if not

seeding by September 15, use winter wheat only as oats will not grow enough to justify its use in the mix. Use certified, nontreated seed wheat varieties to reduce cost. Most wheat varieties have adequate winter hardiness for Nebraska for cover crop purposes.

Fall Work

- **Soybean harvest**—Harvest fields where the cover crop mix is to be planted as early as possible.
- **Timing of planting**—Plant the cover crop mix immediately after harvest (by the third week in September for most of Nebraska). For wheat only, plant before two weeks after the 50% frost date. Use the Selector Tool (in Resources section) for more precise dates for your county.
- **Planting method**—Drill to a depth of 0.75–1.50 inches or broadcast. Incorporation of the seed, if any, should be light since excessive disturbance of soybean stubble may negate any benefit of the cover crop. See Resources for more details on seeding methods. All seeding rates are based on seed with germination rates of 85–98%.
- **Seeding rate for a mix**—Drilled: oats, 20 lbs./acre; wheat, 25 lbs./acre; rapeseed 1 lb./acre. Broadcast: oats, 25 lbs./acre; wheat, 35 lbs./acre; rapeseed 2 lbs./acre.
- **Seeding rate for wheat alone**—Drilled: 45–60 lbs./acre. Broadcast with shallow incorporation: 50–65 lbs./acre.
- **Aerial seeding or overseeding**—An alternative to seeding after harvest is to do aerial seeding with a plane or helicopter or overseeding with a ground-based vehicle. In most of Nebraska, seeding should take place in late August or by the first week of September and before 25% of the soybean leaves have yellowed and dropped. Rainfall after seeding is essential for establishment.
- **Seeding rate for overseeding**—For a mix: oats, 20 lbs./acre; wheat, 30 lbs./acre; rapeseed, 3 lbs./acre. For wheat alone: 50 lbs./acre.



Figure 1. Here, corn is being planted into recently terminated winter wheat that is 6 to 8 inches tall. (Nathan Mueller)

- **Tillage or no-tillage**—To allow for adequate cover crop growth, it is best if no full-width tillage takes place until spring in order to maintain surface cover to prevent erosion.
- **Fertility or liming**—If applying P, K, or lime, complete the application prior to the seeding operation or apply to the growing oats/wheat/rapeseed before the ground freezes. If it is necessary to inject N fertilizer or manure in the fall, a low-disturbance applicator should be used to minimize reduction in surface residues.

Spring Work

- **Starter fertilizer**—Strongly consider equipping your corn planter with 2x2 starter fertilizer, and aim for a starter fertilizer rate between 30–50 pounds of actual N per acre.
- **Termination timing**—Terminate the wheat in the spring when plants are 6 to 12 inches tall and actively growing or about two weeks before planting corn—whichever comes first. Many growers will successfully plant corn into terminated wheat taller than 12 inches, especially if weed control is a primary purpose, but new cover crop users should terminate when the wheat is smaller.
- **Termination herbicide**—Wheat can be terminated with a full rate of glyphosate (minimum of 1 lb. acid equivalent [ae] per acre) after dormancy breaks in the spring. Effectiveness and rapidity of termination improves if wheat is rapidly growing and air temperatures are warmer. Larger wheat, wheat past the boot stage, or wheat sprayed during cooler weather can be more difficult to kill. Be careful of atrazine and atrazine premixes antagonizing glyphosate if weather is cool and cloudy near the application date.
- **Termination modifications for dry weather**—Watch the weather and be ready to modify your termination plans. In a dry spring, wheat has the potential to use moisture that the cash crop will need, so terminate cover crops sooner to allow rainfall to make up the deficit.
- **Termination modifications for wet weather**—In a wet spring, be ready to take advantage of any break in the weather

and/or use low axle weight sprayers. If projected corn planting is less than 10 days away and the wheat is tall, then it often works better to spray within a day or two of planting.

Resources

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

Post Corn, Going to Soybean: Use Cereal Rye (Nebraska Cover Crop Recipe series, MCCC-107)—available from www.mccc.msu.edu

Cover Crop Options after Corn or Soybean Harvest, <https://cropwatch.unl.edu/cover-crop-options-after-corn-or-soybean-harvest>

Managing Cover Crops: An Introduction to Integrating Cover Crops into a Corn-Soybean Rotation (Purdue Extension publication AY-353-W)— https://edustore.purdue.edu/item.asp?item_number=AY-353-W

Residual Herbicides and Fall Cover Crop Establishment (Purdue Extension Weed Science publication), <https://ag.purdue.edu/btny/weedscience/Documents/covercropcarryover.pdf>

How Herbicide Labels Restrict Using Cover Crops as Forage, <https://cropwatch.unl.edu/how-herbicide-labels-restrict-using-cover-crops-forage>

Corn and Soybean Herbicide Options for Planting Cover Crops for Forage in Fall, <https://cropwatch.unl.edu/corn-and-soybean-herbicide-options-planting-cover-crops-forage-fall>

Terminating Cover Crops: Successful Cover Crop Termination with Herbicides (Purdue Extension publication WS-50-W), https://mdc.itap.purdue.edu/item.asp?Item_Number=WS-50-W

Authors

Gary Lesoing, University of Nebraska–Lincoln, and Katja Koehler-Cole, University of Nebraska–Lincoln (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

Cory Brubaker, USDA-NRCS; Keith Glewen, University of Nebraska; Eileen Kladviko, Purdue University; Anna Morrow, Midwest Cover Crop Council; Nathan Mueller, University of Nebraska; Jody Saathoff, CHS, Inc., Minden, NE

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

October 2019

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer. ©2019 by MCCC. All rights reserved.