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Tips and Considerations For Getting Started With Cover Crops

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Tips and Considerations For Getting Started With Cover Crops

Abstract

Cover crops have been all the rage these past couple years because they are one of the practices that farmers can use to reduce losses of nitrogen and phosphorus from farm fields. Additionally, there are countless research trials that have documented the ability of cover crops to reduce erosion, build up or recycle nutrients, enhance soil health, assist with weed control, and/or provide forage or grazing. Cover crops, however, are not an “add on”. Using cover crops requires a complete rethinking of your cropping system practices. Changes in priorities, timing, logistics, and operations are required to allow for successful implementation of cover crops into your cropping system. Adjustments may need to be made in the timing of nutrient application, timing or type of tillage practices used, timing of weed control and herbicides use, and timing of planting and harvest of main crops. For farmers and agronomists new to cover crops there are several tips and considerations that can ease the transition. Here are some suggestions to get you off to a successful start.

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ICM News

Tips and Considerations For Getting Started With Cover Crops

August 13, 2015

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Cover crops have been all the rage these past couple years because they are one of the practices that farmers can use to reduce losses of nitrogen and phosphorus from farm fields. Additionally, there are countless research trials that have documented the ability of cover crops to reduce erosion, build up or recycle nutrients, enhance soil health, assist with weed control, and/or provide forage or grazing. Cover crops, however, are not an “add on”. Using cover crops requires a complete rethinking of your cropping system practices. Changes in priorities, timing, logistics, and operations are required to allow for successful implementation of cover crops into your cropping system. Adjustments may need to be made in the timing of nutrient application, timing or type of tillage practices

used, timing of weed control and herbicides use, and timing of planting and harvest of main crops. For farmers and agronomists new to cover crops there are several tips and considerations that can ease the transition. Here are some suggestions to get you off to a successful start.

Start small: increase scale as your comfort level increases. This reduces the risk and lessens the additional time required for cover crop implementation. Like any new equipment or management practice, there is a learning curve. Smaller fields, irregular fields, or portions of fields prone to erosion and nitrogen leaching are good candidates to start with. Pick a field that is easy to see and monitor throughout the fall, winter, and spring.



Look for “easy” entry points in your farming system. In the first years of using cover crops identify situations, rotations, fields, or programs that make them easier to use by giving you extra time to manage and scout them, providing obvious benefits, or reducing risks and costs. Planting cover crops after corn silage, early maturing soybean, seed corn, small grains and on prevented planting acres or in drowned out areas of fields allow more time for planting and plant growth. Other easy entry points might be fields near livestock operations that are conducive for grazing or forage harvest; watershed programs that offer cost-share for cover crop seeding or implementation; or problem areas in fields that frequently have rill erosion or ponding. These entry points in farming systems allow more flexibility to learn what aspects of the cropping system need to be tweaked with the addition of cover crops.

Species selection and seed sources need to be determined early. Early determination of which cover crop species will be used will ensure seed availability or at least allow time to find alternatives. Beginners should keep seed selection simple and inexpensive by using oats or spring small grains before corn and winter small grains before soybean. Once you are comfortable using cover crops, then consider using other species or mixtures. Species selection requires answers to questions like: 1) what’s the goal of using the cover crop, 2) will the cover crop grow and overwinter, 3) how will it be planted and terminated, and 4) what is the current and subsequent crop? These answers will guide you to winter cereal grains, spring cereal grains, legumes, brassicas, or perennial grasses and legumes that are commonly used as cover crops. Winter cereal crops typically have good fall and spring biomass growth and overwinter. Spring cereal grains grow well in the fall but will winter kill. Legumes are more expensive and grow slowly but have the potential to fix nitrogen and overwinter. Brassicas provide options to alleviate surface compaction or provide forage quality, but most don’t overwinter.

Seeding rates need to be adjusted not only for the species selected but also based on how the cover crops will be planted and when they will be planted. Generally, seeding rates are based on how many seeds are needed to establish good cover when being planted with a grain drill. Aerial and surface broadcast planting necessitates slightly higher seeding rate due to less-than-ideal spread patterns, unpredictable seed-to-soil contact, and the possibility of dry conditions delaying or reducing germination. However, aerial and broadcast seeding does allow for timelier planting into standing corn and soybean crops before harvest.

Timing of seeding will vary depending on the cover crop species, type of planting method, and fall frost dates, among other factors. The date of Iowa's first hard freezes varies by 23 days from southeast to northwest Iowa. In general, cover crops that don't overwinter need to be planted early enough to allow time for adequate fall growth. Cover crops that overwinter can be planted later because they will resume growth in the spring. In central Iowa, aerial seeding into standing crops is ideally between August 15 and September 15 to ensure good germination and growth before fall killing frosts, especially for non-winter-hardy cover crops. Timing of aerial or broadcast seeding into standing crops is based on three factors: cash crop maturity, rainfall pattern, and calendar date. For a corn crop, it is better if aerial seeding occurs after the lower leaves have 'fired' up to the ear leaf. For a soybean crop, the best timing is when the leaves first begin to yellow. However, if the cash crop has not reached this stage by early September or an extended rainy period is forecast then aerial seeding should proceed. Conversely, if the cash crop is not even close to maturing and the topsoil and weather has been dry, then aerial seeding should be reconsidered. Planting, drilling, or shallow incorporation of cover crop seed after harvest should ideally be completed by October 15 and no later than November 1 in central Iowa. Planting dates in northwest Iowa are roughly 8 days earlier than central Iowa, whereas planting dates in southeast Iowa can be roughly 14 days later.

Spring termination of winter-hardy cover crops can be tricky but the benefits of spring growth are worth the effort. Termination of grass cover crops is recommended 14 days prior to corn planting and up to 2 days prior to soybean planting. For beginning cover crop users, grass cover crops should be terminated at less than 10 to 12 inches tall before corn planting. Glyphosate-based herbicides tend to be the most effective for spring termination. Note that glyphosate performance will be enhanced with the addition of ammonium sulfate and nonionic surfactants and applications on warm, dry spring afternoons.

Corn and soybean management following cover crops also requires change. Tillage becomes less desirable unless strip tillage is being used. Nutrient applications would best be moved to spring pre-plant or split applications. Adjustments or modifications may be needed to ensure planter units don't cause sidewall compaction or leave the furrow open. Pay special attention to planting depth, planter row unit down pressure, and closing wheel force and effectiveness. There is some evidence that starter fertilizer, increasing

corn seeding rates by 10%, and leaving a cover crop-free strip where next year's corn row will be planted can reduce problems for the corn crop. Consider how soil residual herbicides you use in the spring and summer may affect cover crop germination, emergence, and growth in the fall. Pay attention to insects that may benefit from spring 'green' growth such as black cutworms and armyworms. Watch for seedling root diseases and use fungicide seed treatments especially when cover crops and cash crops that follow come from the same plant families.

Learn about cover crops. Go to field days. Talk to other farmers using cover crops. Read resources about cover crops keeping in mind the location and cropping system from which the information is coming. Not all cover crop information will be pertinent to your farm and your cropping system. Cover crops that grow well in southern Indiana probably won't grow the same way in northern Iowa. Or cover crops planted after wheat harvest in late July or early August won't grow the same way planted after soybean harvest in early October.

In summary, to ensure success with cover crops start small, start simple, pay attention to detail, be timely, make planter adjustments, scout early and often, and think about the cropping system - not just the crop. Use the following resources to lessen your learning curve.

- [Recommended cover crop seeding methods and tools](#), NRCS Agronomy Technical Note
- [Herbicide carryover table](#), Pennsylvania State University
- [Cover crop selection tool](#), Midwest Cover Crops Council
- [Midwest Cover Crops Field Guide](#), Midwest Cover Crops Council
- [Integrating Cover Crops in Soybean Rotations](#), Midwest Cover Crops Council
- [Managing Cover Crops Profitably](#), SARE
- [Effect of Residual Herbicides on Cover Crop Establishment](#), Iowa State University, ICM News
- [Terminating Cover Crops](#), Iowa State University, ICM News
- [Cereal Rye Cover Crops, Allelopathy and Corn](#), Iowa State University, ICM News

Organizations with cover crop information and resources.

- [Midwest Cover Crops Council](#)
- [Iowa Learning Farm](#)
- [Practical Farmers of Iowa](#)
- [Sustainable Agriculture Research and Education](#), SARE

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