Early Season Cover Crop Planting

Different cover crop species provide various benefits for the following crop and soil. Legumes are known for their ability to fix nitrogen, brassicas break up compaction, and grasses are used as an overwintering species to reduce spring melt erosion. When different cover crop species are used in combination, they can offer a wider variety of benefits.

While some grass species can establish when planted late in the season (ie after harvest), brassicas and legumes require more heat units, making early planting important. This factsheet will look at an equipment modification case study that allowed for early season cover crop planting.

Legumes: include clovers, alfalfa, hairy vetch, and field peas

Benefits:

- Promote nitrogen cycling
- Build organic matter
- Reduce soil erosion

Photo: Mike Belan

Brassicas: include oilseed radish, turnips, mustard, and buckwheat

Benefits:

- Taproots ease compaction
- Suppress weeds
- Nutrient scavenge

Photo: Dave McEachren

Approximate Cover Crop Seeding Periods for Southwestern Ontario

Table adapted from the Midwest Cover Crop Field Guide Second Edition

Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Frost Seeding - red clover											
Early Spring - annual ryegrass, barley, oats, field pea, hairy vetch											
Spring - oats, alfalfa, field pea, red clover, mustards, oilseed radish, rapeseed/canola, turnip											
Summer - millets, sorghum-Sudangrass, Sudangrass, alfalfa, crimson clover, sweetclover, buckwheat											
Late Summer/Early Fall - annual ryegrass, barley, oats, alfalfa, field peas, hairy vetch, winter pea, mustards, oilseed radish, turnip											
Fall - rye, triticale, wheat											

When determining what cover crop species is right for your system, it is important to consider your herbicide program and cover crop termination methods. For more information visit **mccc.msu.edu/selector-tool**

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Case Study: The Richards Project

Concern

Currently, Mark Richards plants his cover crop after soybean and sugar beet harvest. Planting after harvest can result in an uneven and poor establishment of the brassica and legume cover crop species which require more heat units. In order to improve the establishment of his brassicas and legumes, Richards wanted to move his planting window earlier: before sugar beet harvest and at soybean leaf drop. By planting earlier in the season, the brassicas and legumes have more time to establish and produce biomass before frost.

Solution

Modify Richards' existing equipment so he can broadcast his cover crop seed over his soybeans at leaf drop and prior to sugar bet harvest.

Equipment Modifications

Richards modified his existing sprayer by attaching three seed spreader units along the 120-foot boom. Each spreader is capable of broadcasting cover crop seeds over a 40-foot spread pattern.

Benefits of this Modification

1. This modification will enable Richards to broadcast brassica and legume cover crop seed over soybeans at leaf drop and prior to sugar beet harvest, extending the cover crop growing season. Furthermore, the dropped soybean leaves will serve as a mulch to cover the seed, retain moisture, and improve germination, establishment, and growth.
2. Richards will be able to reduce compaction by using the same tracks and equipment he used earlier in the year for spray applications.
3. In addition, Richards will be able to broadcast red clover cover crop seed over his planted winter wheat field during his early nitrogen pass. The red clover cover crop will reduce the risk of runoff, leaching, and denitrification.

The Richards equipment modification was completed with support from SCRCA and OMAFRA. If you are interested in modifying your equipment to improve soil health and reduce nutrient losses, please contact SCRCA

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