

## Cover Crop Decision and SmartMix™ Calculator Tools

### Contacts:

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### Web Links:

Cover Crop Decision Tool – (Midwest Cover Crop Council):  
<http://mcccdev.anr.msu.edu/VertIndex.php>

SmartMix (Cover Crop) Calculator™ – (Green Cover Seed):  
<http://www.greencoverseed.com/smartmix.htm>

## Introduction to Working with These Tools

### Background

Cover crops provide multiple benefits to farming systems. Incorporating more “green” plants into the landscape during the “brown” months helps protect water quality and maintain natural cycles for water, carbon, nutrients and soil organisms. Cover crops also improve soil health and reduce soil erosion and nutrient loss. But knowing how best

to incorporate cover crops, which species to use, when to plant and terminate, and how to add cover crops without affecting primary cash crop management can be confusing.

Two new online tools – the **Iowa Cover Crop Decision Tool**, by the Midwest Cover Crops Council, and **SmartMix Calculator™**, a cover crop worksheet by Green Cover Seed – are

now available to help you figure out which cover crop species will work best based on a range of farm- and location-specific criteria.

This handout explains the basics of working with these exciting new cover crop planning tools. It is recommended that you use both tools in conjunction with each other for maximum benefit.

**Midwest Cover Crops Council - Cover Crop Decision**  
Iowa: Taylor County Seeding Dates

Location Information: Iowa, Taylor  
Cash Crop: Corn - Grain, Plant Date: [ ], Harvest Date: [ ]  
Drainage Information: Select a Drainage Class, Flooding: No  
Goal #1: Select an attribute, Goal #2: Select an attribute, Goal #3: Select an attribute

Select cover crop to create information sheet: 50% HV/50% WC Rye [Submit]

**3a** Key:  
Reliable Establishment (Green)  
Freeze Risk to Establishment (Yellow)  
Frost Seeding (Red)

Species	Mar-15	Apr-1	Apr-15	May-1	May-15	Jun-1	Jun-15	Jul-1	Jul-15	Aug-1	Aug-15	Sep-1	Sep-15	Oct-1	Oct-15	Nov-1	Nov-15	Dec-1	Dec-15	Jan-1	Jan-15	Feb-1	Feb-15
<b>Nonlegumes</b>																							
Barley, Winter																							
Buckwheat																							
Millet, Japanese																							
Millet, Pearl																							
Oats																							
Rye, Winter Cereal																							
Ryegrass, Annual																							
Sorghum-sudangrass																							
Sudangrass																							
Triticale, Winter																							
Wheat, Winter																							
<b>Brassicas</b>																							
Mustard, Oriental																							
Radish, Oilseed																							
Rapeseed/Canola																							
Turnip/Rape, Forage type																							
<b>Legumes</b>																							
Alfalfa - Dormant																							
Alfalfa - Non-dormant																							
Clover, Crimson																							
Clover, Red																							
Clover, White																							
Cowpea																							
Pea, Field/Winter																							
Soybeans																							
Sweetclover																							
Vetch, Hairy																							
<b>Mixes</b>																							
50% HV/50% WC Rye																							
50% W.Pea/50%OSR																							
60% A.Ryegr/40% OSR																							

### 1. Cover Crop Decision Tool

This tool was developed by the Midwest Cover Crops Council, with Iowa-specific information added by the Iowa Cover Crop Working Group. County-specific cover crop information is available to help farmers improve their cover crop selections.

#### To get started:

- 1). Select your state and county.
- 2). Select the crop you will plant, your planting date and estimated harvest date. (You can enter other details, like your drainage class and your goals).
- 3). The calendar chart will automatically update based on your selections. Use this information – and the color-coded key (3a) – to determine when and how a cover crop can successfully be established in your county.
- 4). Use the information to determine which seeding method will be the most useful.

**Note:** Use this tool with the **SmartMix Calculator™** (details on back) for the most complete information.

# Cover Crop Online Tools Overview

## 2. SmartMix Calculator™


This tool was developed by Green Cover Seed, based in Bladen, Neb.

### Why use it?

- It lets you choose from nearly 50 different species of legume, brassica, grass and broadleaf cover crops to make the mix that best fits your farm.
- You can vary seeding rates to achieve a diverse cover crop mix.
- The calculator automatically analyzes your mix for carbon-to-nitrogen ratio, nitrogen fixation or grazing potential, winter tolerance, diversity index, and frost tolerance.
- The calculator estimates seeds per acre, which will aid you with stand counts to determine establishment success.
- The seeds per pound, seeds per acre, price per pound and total cost of your mix are immediately available.

### To get started:

- 1). Select your general location based on your proximity to a major highway, then your average annual rainfall, maturity stage you want the cover crop to reach and seeding method.
- 2). Select cover crop species that are determined to be more successful for your farm. (**Note: Use the Cover Crop Selector Tool to help you figure this out.**)
- 3). Get estimates of key business details, like total pounds of seed needed, approximate cost of the mix and estimates of mixing, bagging and shipping costs if you choose to purchase your mix from Green Cover Seed.



Where are you located?  1

What rainfall zone are you in? (Avg Inch/Yr)

What maturity stage will the cover crop achieve?

How will this crop be seeded?

Cover Crop Mix Potential Ratings (scale of 1-10)											
C:N Ratio	Nitrogen Fix	Grazing	Drought	Frost	Winter	Diversity	Salinity				
36	2.1	7.1	8.5	10.0	10.0	2.5	6.1				

Use the yellow areas to select your species and your seeding rate per acre. Use the drop down boxes to select the species you want to include

	Type	Full Rate	lbs per acre	% full rate	% by wt	% by # seed	Effect %	Seeds/lb	Seeds per acre	Cost per lb	Seed Cost/acre
<b>TOTALS</b>											
			<b>60</b>	<b>83%</b>					<b>870,000</b>		<b>\$35.00</b>
<b>Legumes</b>											
<input type="text" value="Hairy Vetch"/>	<input type="text" value="CS-B"/>	27	<b>10</b>	37%	17%	14%	15%	12,000	120,000	\$1.90	\$19.00
<b>Grasses</b>											
<input type="text" value="Cereal Rye - Elbon South"/>	<input type="text" value="CS-G"/>	108	<b>50</b>	46%	83%	86%	85%	15,000	750,000	\$0.32	\$16.00
<b>Brassicas</b>											
<b>Other Broadleaves</b>											

Inoculant, Mixing and Bagging Cost/acre:	\$20.40	Seed Cost/acre:	\$35.00	Total Cost per Acre:	\$55.40
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Name:  Phone:  E-mail:

Address:  City, State, Zip:

Mix:  Acres to plant: **1.00**

Date: 3/15/13 Total Pounds of Green Cover SmartMix Needed: **60**

Bulk, Totes or 50# Sack?

Inoculant cost (estimate per pound):	\$0.04	(subtotal):	\$2.40
Mixing cost (per pound):	\$0.30	(subtotal):	\$18.00
Bagging cost (per pound):	\$0.00	(subtotal):	\$0.00
Shipping cost estimate (per pound):	\$0.00	(subtotal):	\$0.00
<b>Total Cost with estimated shipping:</b>		<b>\$55.40</b>	

### Cover Crop Tool Contacts & Resources

#### Cover Crop Decision Tool

Tom Kaspar

- National Laboratory for Agriculture & the Environment
  - Executive Committee of Midwest Cover Crop Council
- (515) 294-8873  
tom.kaspar@ars.usda.gov

#### SmartMix Calculator™

Brian and Keith Berns  
Green Cover Seed  
(402) 469-6784  
keith@greencoverseed.com

#### PFI Farminar – Intro to the Cover Crop Decision-Making Tools

Sarah Carlson

This webinar, held March 19, 2013, provides an overview to using the Cover Crop Decision Tool and SmartMix Calculator™. Access it for free at: <http://practicalfarmers.org/farminar>