

# Cover Crops to Improve Soil in Prevented Planting Fields

Natural Resources Conservation Service (NRCS)  
Madison, Wisconsin

Wisconsin Fact Sheet  
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Prolonged rains and flooding have resulted in many fields that could not be planted this year. Farmers in this situation need to weigh not only their program and insurance options (“prevented planting”), but should also consider other options to improve soil and long-term productivity.

Cover crops can capture applied nutrients, fix nitrogen, build organic matter, control weeds, control erosion and/or improve soil health and biology during the remainder of the season. These benefits can build yield potential for future crops. With the potential “prevented planting” payment and the improved yield potential following a full season “green manure” crop, the profit potential for the whole rotation could be considerable.



*A key soil health concept is to ensure that there is vegetation green and growing during all times of the year.*

**Check with your crop insurance agent about prevented planting requirements and harvest restrictions for cover crops.**

## Herbicide Concerns

A bioassay test is recommended to determine if there is any herbicide carryover. For amine herbicides, sorghum-sudangrass is the most tolerant cover crop. Consult with an agronomist to determine if residual herbicides will prevent or suppress growth of selected cover crops.

## Cover Crop Species Guidance

Cover crop selection and management should focus on maximizing both above and below-ground biomass and encouraging nutrient cycling as deep in the soil profile as possible. Choosing a mix of a grass with a fibrous root system and a legume or brassica with a tap root will usually provide the widest range of benefits.

Planting wildlife friendly cover crops such as buckwheat or brassicas and leaving the growth or grain provides winter food for wildlife and pollinators.

## Seeding and Establishment

One of the challenges of early to mid-summer seeding is the timeliness of rainfall after seeding for germination. It is best if the seed is drilled. This will also address concerns about soil crusting and seed-to-soil contact.

## Additional References

Midwest Cover Crop Council: [www.mccc.msu.edu](http://www.mccc.msu.edu)

Sustainable Agriculture Research and Education (SARE): *Managing Cover Crops Profitably*  
[www.sare.org/publications](http://www.sare.org/publications)

NRCS Field Office Technical Guide (eFOTG): Section IV, Wisconsin Standard, 340 Cover Crops

NRCS Wisconsin Agronomy Technical Note 7, Cover and Green Manure Crop - Benefits to Soil Quality

## Cover Crops to Improve Soil in Prevented Planting Fields

### Cover Crops Recommendations by Resource Concern

Resource Concern	Species	Pure Stand Rate lbs./ac. of PLS <sup>1</sup>	Seeding Dates
SUMMER COVER			
Erosion Control	Spring Oats	33 - 110	4/10 - 9/1
	Annual Ryegrass	22 - 33	4/10 - 6/1, 8/1 - 9/1
	Sudangrass <sup>2</sup> and Sorghum/Sudangrass <sup>2</sup>	28 - 33	6/1 - 7/15
	Buckwheat <sup>4</sup>	50 - 65	5/15 - 8/1
	Millet	25	6/1 - 7/15
Compaction	Oil Seed Radish <sup>4</sup>	11 - 22	4/10 - 6/15, 7/15 - 8/15
	Rape/Forage Turnips/Canola <sup>4</sup>	2 - 6	4/10 - 6/15, 7/15 - 8/15
Nitrogen Fixing	Alfalfa	13 - 16	4/15 - 6/1, 8/1 - 8/30
	Red Clover	9 - 13	4/10 - 8/15
	Cow Peas	55 - 99	6/1 - 7/15
Herbicide Concern <sup>3</sup>	Sorghum/Sudangrass <sup>2</sup>	28 - 33	6/1 - 7/15
FALL/WINTER COVER			
Soil Building/N Scavenge	Annual Ryegrass	22 - 33	8/1 - 9/1
	Winter Cereal Rye	60 - 185	7/15 - 10/15
	Winter Wheat	65 - 165	8/1 - 10/1
	Spring Oats	33 - 110	4/10 - 9/1
	Winter Triticale	65 - 165	8/1 - 10/1
Nitrogen Fixing	Hairy Vetch	17 - 28	7/15 - 9/15
	Winter Peas	65 - 100	8/1 - 9/1
	Crimson Clover	11 - 17	6/1 - 8/1
	Alfalfa	13 - 16	8/1 - 8/30
	Red Clover	9 - 13	4/10 - 8/15

<sup>1</sup>Pure Live Seed (PLS)

<sup>2</sup>Sorghum and Sudangrass contain a compound called dhurrin, which can breakdown to release prussic acid (Hydrogen Cyanide, HCN) and under certain conditions feed may have toxic levels that kill animals. The recommendation is not to graze or green chop until plant is 20 inches in height and 10 days after a killing frost.

<sup>3</sup>Sorghum/Sudangrass is the most tolerant to amine herbicides

<sup>4</sup>Buckwheat and some Brassicas may become a weed issue, if these species produced viable seeds.

It is recommended that you plant diverse cover crop mixes. The rates listed are for pure stand seedings. When developing a cover crop mix, take the percent desired by the pure stand rate to determine seeding rate by species. (Example: 60% Winter Cereal Rye and 40% Forage Radish would have a seeding rate of  $0.6 \times 75 = 45$  lbs. Winter Cereal Rye and  $0.4 \times 8 = 3.2$  lbs. Forage Radish)

Additional cover crop species can be found in Wisconsin Agronomy Technical Note 7, Cover and Green Manure Crop - Benefits to Soil Quality. See [www.wi.nrcs.usda.gov](http://www.wi.nrcs.usda.gov) under topics/technical resources

## Cover Crops to Improve Soil in Prevented Planting Fields

### Examples of Diverse Cover Crop Mixes

Resource Concern	Species Mix	Ibs./ac. of PLS	Seeding Dates
SUMMER COVER			
Erosion Control	Annual Ryegrass	4	6/1 - 8/15
	Sorghum/Sudangrass	4	
	Oats	9	
	Buckwheat	8	
	Oil Seed Radish <sup>1</sup>	2	
	Cow Peas	8	
Compaction	Oil Seed Radish <sup>1</sup>	2	4/15 - 6/15,
	Forage Turnips <sup>1</sup>	2	7/15 - 8/15
	Rape/Canola <sup>1</sup>	2	
	Millet (Pearl of Japanese)	8	
Nitrogen Fixing 1	Alfalfa	8	4/10 - 6/1,
	Red Clover	5	8/1 - 8/30
Nitrogen Fixing 2	Cow Peas	15	5/15 - 8/15
	Crimson Clover	6	
	Hairy Vetch	5	
Grazing/Compaction	Cow Peas	10	5/15 - 8/15
	Millet (Pearl of Japanese)	5	
	Sorghum/Sudangrass	5	
	Forage Turnip <sup>1</sup>	2	
	Forage Radish <sup>1</sup>	2	
FALL/WINTER COVER			
Soil Building/N Scavenge	Cereal Grain (Winter Cereal Rye, Winter Wheat, Winter Triticale)	38	8/1 - 9/1
	Oil Seed Radish	5	
Erosion Control	Cereal Grain (Winter Cereal Rye, Winter Wheat, Winter Triticale)	45	8/1 - 9/15
	Hairy Vetch	6	
Nitrogen Fixing	Cereal Rye	30	8/1 - 9/1
	Winter Peas	15	
	Hairy Vetch	5	
Grazing/Compaction	Cereal Grain (Winter Cereal Rye, Winter Wheat, Winter Triticale)	38	8/1 - 9/1
	Oil Seed Radish	3	
	Forage Turnip	3	

<sup>1</sup>Brassicas will bolt when seeded in the spring, and will produce seed.