



# Missouri Information Sheet Using Cover Crops for Prevented Planting Acres IS-MO-340

Natural Resources Conservation Service (NRCS)  
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Missouri Conservation Practice 340

Prolonged rain and flooding has resulted in many fields that will go unplanted this year. Producers in this situation need to weigh not only their program and insurance options (“prevented planting”) but should also assess agronomic options to ensure long-term productivity from this difficult situation.

Producers should explore the benefits of planting a cover crop that has the potential to capture applied nutrients, fix nitrogen, build organic matter, control weeds, control erosion and/or improve soil health and biology during the remainder of the growing season. These together can build considerable yield potential for following crops.

Producers are advised to check with USDA’s Farm Service Agency (FSA) and their crop insurance agent on prevented planting requirements and haying, grazing, harvest restrictions for cover crops. For more information, USDA’s Risk Management Agency (RMA) recently published a frequently asked questions (FAQ) on crop insurance and prevented planting.

Link for the website is: [2015 Excess Precipitation for Kansas, Missouri, and Nebraska](http://www.rma.usda.gov/help/faq/ksmone_excessprecip.html)  
[http://www.rma.usda.gov/help/faq/ksmone\\_excessprecip.html](http://www.rma.usda.gov/help/faq/ksmone_excessprecip.html)

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

## Building vs. Losing Topsoil

As excessive rainfall runoff or flood waters cut across unprotected fields, the top soil may have been lost from erosion and scouring. With the productive topsoil lost, so too are the nutrients, organic matter, and soil biology. If tillage is applied to these water-damaged fields to control weeds or smooth them out, even relatively flat soils will lose carbon, nitrogen and biomass.

Above-ground biomass of cover crops helps protect the soil from further sun, wind and water damage. Selecting high biomass cover crop mixes will rebuild topsoil. Cover crops, especially if no-tilled, will add organic biomass both above and below ground to rebuild topsoil quicker than if left to grow weeds or especially if left with no cover. Avoid removing biomass from the field by harvesting for forage or grain, which will reduce the organic matter benefits. Instead consider killing or mowing prior to seed-head formation particularly if reseeding could be incompatible with subsequent crops. This will also ensure rapid decomposition and leave more nutrients in the roots that are available to soil organisms and subsequent crops.



## Soil Biology, Structure and Compaction

Many fields saturated for long periods lose soil organisms that create soil macro-pores and cycle nutrients and lose beneficial soil biology such as mycorrhizae fungi and rhizobia bacteria that build soil structure. Without these organisms, the soils are very subject to compaction, crusting, and high bulk density problems.

Some fields may be so compacted that remediation activities are needed. However, cover crops, whether used alone or in conjunction with other compaction remediation activities, are essential to rebuild healthy soil structure. The roots of cover crops help to penetrate compacted zones, hold soil aggregates together, and sustain healthy organisms to restore soil structure. Growing roots are essential to re-establish the mycorrhizae in the soil and to create pathways for air and water to move through the soil profile, which are key components to restoring the soil's functional properties and will keep the pathways more open to result in a quicker fix of the compacted layers.

## Building vs. Losing Nitrogen

Cover crops can build organic nitrogen, and/or sequester residual Nitrogen in the soil.

A legume or legume mix planted in early summer can help provide some of the needed Nitrogen of a following corn crop. A brassica or grass, or brassica and grass mix can scavenge residual N from the soil and even more in situations where manure or preplant nutrients have been recently applied. Additionally, this results in a more rapid gain in total soil biomass and a higher total nutrient availability for subsequent crops. Make sure all legume seed is properly inoculated. Remember that planting brassicas too early (prior to August) may cause them to bolt and produce large tubers or seed.



## Herbicide Concerns

Ensure herbicides used with crops in the rotation are compatible with cover crop selections and purpose(s). Some herbicides will carry over in the soil and restrict cover crop establishment, uses, and growth.

## 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 and/or the grain can be a very valuable winter food source for a wide variety of wildlife and pollinators. Just remember that allowing cover crops to produce seed may not be desirable in many cropping situations.

## Seeding and Establishment

It is best if seed is drilled or planted with planting equipment. This also addresses concerns about crusted soil and seed to soil contact. If seed is broadcast see the broadcast seeding rate in Appendix 1 of the Missouri Cover Crop (340) standard.

**For more information on species selection, seed dates, and rates please see the Missouri Cover Crop (340) standard Appendix 1 located at <http://efotg.sc.egov.usda.gov/treemenuFS.aspx>**



## Cover Crops Recommendations by Resource Concern

Resource Concern	Species Mix	% of Pure Stand Rate	lbs./acre of Seed (Drilled Rates)	Seeding Dates
<b>SUMMER COVER</b>				
<b>Erosion Control</b>	Sorghum/Sudangrass	20	3	See Cover Crop Standard for Seeding Dates
	Buckwheat	30	7.5	
	Oilseed Radish <sup>1</sup> Or Forage Turnip	20	1 Radish 0.5 Turnip	
	Cowpea	30	15	
<b>Nitrogen Fixing</b>	Cowpea	30	15	See Cover Crop Standard for Seeding Dates
	Soybean	50	20	
	Sunnhemp	20	4.5	
<b>LATE SUMMER/EARLY FALL COVER CROPS</b>				
<b>Soil Building/N Scavenge</b>	Cereal Grain (Cereal Rye, Winter Wheat, Winter Triticale)	60	24	See Cover Crop Standard for Seeding Dates
	Oilseed Radish	40	2	
<b>Erosion Control</b>	Cereal Grain (Cereal Rye, Winter Wheat, Winter Triticale)	60	24	See Cover Crop Standard for Seeding Dates
	Hairy or Woollypod Vetch	40	6	
<b>Nitrogen Fixing</b>	Cereal Rye or Winter Triticale	20	8	See Cover Crop Standard for Seeding Dates
	Crimson Clover	40	6	
	Hairy or Woollypod Vetch	40	6	

**1 Oilseed radish will bolt when seeded in the spring and will produce seed.**