

Cover Crop

Montana Conservation Practice Job Sheet

340



Definition

Annually seeded cover crops are grown to protect and improve the soil. Cover crops can improve soil tilth, control erosion and weeds, provide supplemental forage, and maintain or improve organic matter. They can reduce compaction and increase water infiltration which decreases leaching of nutrients. Cover crops retain and recycle plant nutrients, provide habitat for beneficial microorganisms, and increase plant diversity. This specification provides guidelines for establishment and maintenance of cover crops.

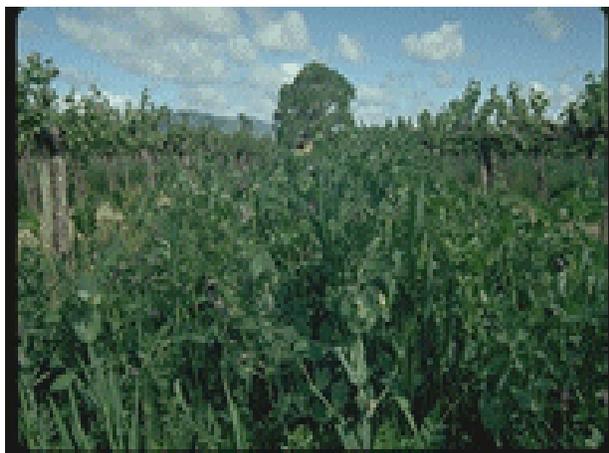
Cover crops are annually grown primarily to protect and improve the soil resource, not to harvest (except as a secondary forage resource). Cover crops also retain and recycle plant nutrients, especially nitrogen, provide habitat beneficial to microorganisms and wildlife, and increase plant diversity.

Purpose

Cover crops function by 1) reducing erosion from wind and water; 2) sequester carbon in plant biomass and soils to increase soil organic matter content; 3) capture and recycle excess nutrients in the soil profile; 4) promote biological nitrogen fixation; 5) increase biodiversity; 6) weed suppression; 8) soil moisture management; and 8) reduce particulate emissions into the atmosphere.

Where used

Cover crops are used on all lands requiring vegetative cover for natural resource protection and/ or additions of nutrients and organic matter.



Annually seeded cover crops can be used for a multitude of purposes including soil and water erosion protection, improvement in organic matter, as supplemental forage, and as a source of nitrogen. Field peas are commonly used in "plow-down" mixes. In the photo above, a combination mixture of field peas, common vetch, and oats are used to add fertility, enhance weed control, and provide supplemental forage. Canola, pictured at right, can be grown as an oil crop or for cover. Canola flowers are attractive to bees, lygus bugs, and other beneficial insects. Canola can also be used as a winter annual cover crop to protect against wind and water erosion and weed control. Adding canola to a small grain rotation also improves weed and insect control due to the change from a cereal crop to a non-related crop.

Resource management system

Cover Crops are normally established concurrently with other practices as part of a resource management system for a conservation management unit. They should be annually installed when vegetative material is needed as green growth of residue to protect an area against wind and water erosion or to enhance the nutrient and organic contents of the soil resource. A cover crop is considered part of the crop rotation.

Wildlife

Cover crops can enhance wildlife objectives, depending on the vegetative species used and management practiced. Using native or adapted vegetative species can improve the wildlife values of a cover crop as well as biodiversity. Avoid mowing during nesting periods.

Operation and maintenance

Terminate cover crop as late in the summer or falls as possible allowing adequate vegetative growth to protect against erosion during critical erosion stages. When managing for soil nutrient additions, incorporate leguminous cover crops just before or at full bloom. To eliminate potential insect or disease infestations associated with growing green tissue (the green bridge) cover crops should be terminated at least two-three weeks prior to planting the next crop. If established for wildlife habitat, avoid termination during the nesting period of ground-nesting wildlife. Control undesirable weed species. Lime and fertilize to soil test recommendations to maintain a vigorous stand.

Specifications

Site-specific requirements are listed on the specifications sheet. Additional provisions are entered on the job sheet. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See practice standard Cover Crop, code 340.

Cover Crop – Job Sheet

Landowner _____ Field number _____

Purpose (check all that apply)	
<input type="checkbox"/> Reduce erosion from wind or waterf	<input type="checkbox"/> Manage excess nutrients
<input type="checkbox"/> Increase soil organic matter	<input type="checkbox"/> Soil moisture management
<input type="checkbox"/> Increase biodiversity	
<input type="checkbox"/> Promote biological fixation	<input type="checkbox"/> Increase soil nutrients and organic matter

Layout	Field __	Field __	Field __
Soil Map Unit(s)			
Planned planting Date			
Planned termination date			
Seeding rate (Lbs/ac)			
Soil Conditioning Index (before/after)	/	/	/
RUSLE2 (Before/After)	/	/	/

Plant Materials (species/cultivars)	Seeding Rate (lbs/acre of pure live seed)	Seeding Date
Field 1:		
Field 2:		
Field 3:		

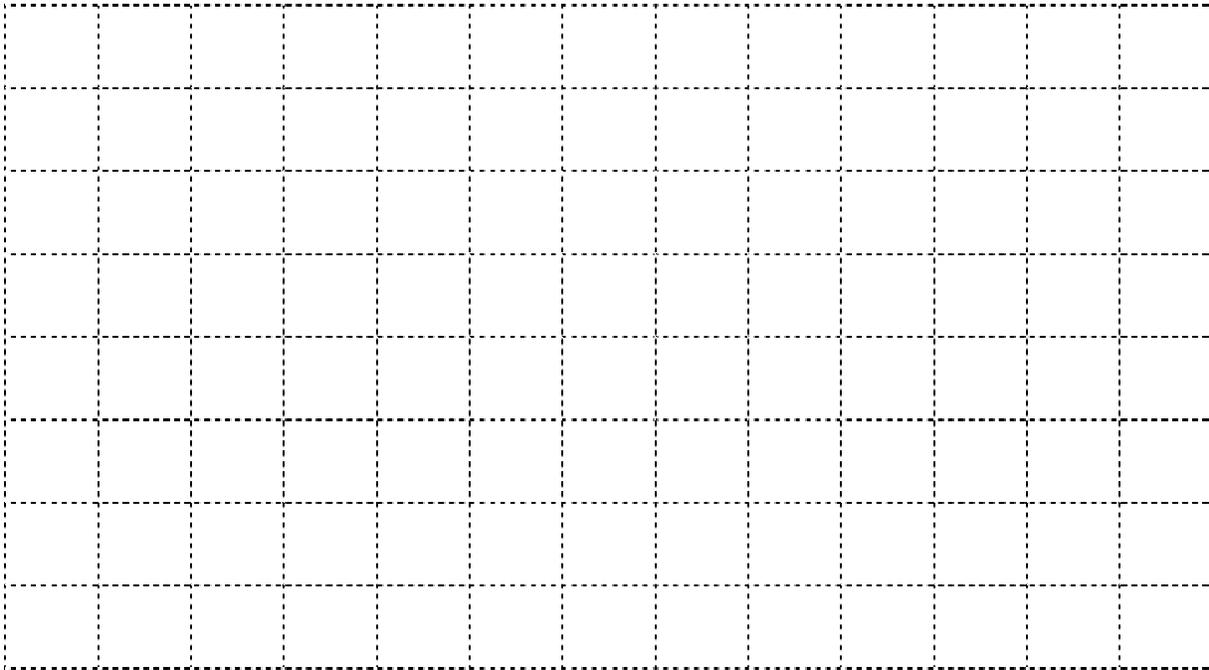
Soil Amend. and Fertilization	Field __	Field __	Field __
N Fertilizer per Soil Test – (lbs/acre)			
P ₂ O Fertilizer per Soil Test – (lbs/acre)			
K ₂ O Fertilizer per Soil Test – (lbs/acre)			

Seedbed preparation
Prepare a firm, weed-free seedbed. Cultivate seedbed and leave firm so that an average person's tracks are not more than 3/8" deep. No-till plantings may also be completed. Additional requirements:
Planting Methods
Drill grass and legume seed ¼ - ½ inches deep uniformly over area. Establish vegetation according to the specified seeding rate. Additional requirements:
Operation and Maintenance
Perform all seedbed preparation and planting operations in a manner that will minimize erosion until cover is established. Control weeds in the cover crop, if necessary, by mowing or herbicide application. Terminate cover crop as late as possible to maximize plant growth while retaining adequate soil moisture for the subsequent crop. To avoid insect or disease infestations associated with green tissue, terminate cover crop at least 2-3 weeks prior to planting the next crop.

Cover Crop – Job Sheet

If needed, an aerial view or a side view of the practice can be shown below. Other relevant information, complementary practices and measures, and additional specifications may be included.

Scale 1"= _____ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")



Approvals:		
_____	_____	_____
Planner/designer	Job Class	Date

Certification:		
I hereby certify that this practice has been installed in accordance with NRCS standards and specifications.		
_____	_____	_____
Producer	Job Class	Date

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