



CONSERVATION ENHANCEMENT ACTIVITY

E340H

CONSERVATION STEWARDSHIP PROGRAM

Cover crops to suppress excessive weed pressures and break pest cycles

Conservation Practice 340: Cover Crop

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial)

RESOURCE CONCERN: Plants

ENHANCEMENT LIFE SPAN: 1 Year

Enhancement Description

Establish a cover crop mix to suppress excessive weed pressures and break pest cycles. Select cover crop species for their life cycles, growth habits, and other biological, chemical and/or physical characteristics. Select cover crop species that do not harbor pests or diseases of subsequent crops in the rotation. Cover crop shall not be harvested, grazed, or burned.

Criteria

- Plant species, seedbed preparation, seeding rates, seeding dates, seeding depths, fertility requirements, and planting methods will be consistent with applicable local criteria and soil/site conditions **(REFER TO STATE SPECIFIC LISTS)**.
- Determine method and timing of cover crop termination to meet grower's objective and current NRCS Cover Crop Termination Guidelines.
- Select species that are compatible with other components of the cropping system.
- Ensure herbicides used with crops are compatible with cover crop selections.

E340H - Cover crops to suppress excessive weed pressures and break pest cycles	July 2019	Page 1
--	-----------	----------



CONSERVATION STEWARDSHIP PROGRAM

- Cover crops may be established between successive production crops, or companion-planted or relay-planted into production crops. Select species and planting dates that will not compete with production crop yield or harvest.
- Do not burn cover crop residue.
- Do not harvest or graze cover crop.
- If specific rhizobium bacteria for selected legumes are not present in the soil, treat seed with appropriate inoculum at time of planting.
- Select cover crop species that do not harbor pests or diseases of subsequent crops in the rotation. Select cover crop species for their life cycles, growth habits, and other biological, chemical and or physical characteristics to provide one or more of the following:
 - To suppress weeds or compete with weeds.
 - Break pest life cycles or suppress of plant pests or pathogens.
 - Provide food or habitat for natural enemies of pests.
 - Release compounds such as glucosinolates that suppress soil borne pathogens or pests.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- Prior to implementation, provide NRCS with the current and planned crop rotation and field operation(s) used for each crop.

Planned Management Rotation Including Cover Crop

Field	Planned Crops/Cover Crop (in sequence)	Planting Date	Harvest/Termination Date

Cover Crop Mix and Seeding Rate

Species	Variety	Seed Size	Typical Seeding Depth	Seeding Rate (PLS lbs/acre)	Percent of Mix (%)

Establishment and Management Considerations:

Task	Provide information and details
Seedbed Preparation	
Seeding Date	
Seeding Depth	
Seeding Method	
Fertilizer, as needed	
Weed Management, as needed	
Termination Date (window)	
Termination Method	

- Prior to implementation, read and follow current [NRCS Cover Crop Termination Guidelines](#).



CONSERVATION STEWARDSHIP PROGRAM

- During implementation, cover crops must not be grazed, burned, harvested or biomass removed.
- During implementation, notify NRCS of any planned changes in crops, crop rotation, or unharvested areas to verify the planned system meets the enhancement criteria.
- After implementation, if changes to the cover crop and crop rotation were made, complete the tables above to document the applied Cover Crop for the contract period and provide to NRCS.

NRCS will:

- As needed, provide technical assistance in selecting cover crop mixes for the crop rotations or substitute species that would meet the criteria of the enhancement.
- As needed, provide additional assistance to the participant as requested.
- Prior to implementation, provide and explain the current [NRCS Cover Crop Termination Guidelines](#).
- During implementation, evaluate planned adjustments in cover crop selected, timing in crop rotation, management, or field operations to verify the new system meets the enhancement criteria.
- After implementation, evaluate the applied crop rotation or management using information provided from the participant, if any variation to planned evaluation, document that the applied rotation met the enhancement criteria.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date

E340H - Cover crops to suppress excessive weed pressures and break pest cycles	July 2019	Page 4
--	-----------	----------



SOUTH DAKOTA (SD) SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E340H

Additional Criteria for SD:

In addition to the criteria specified in the national job sheet E340H, the following additional criteria apply in SD:

- Ninety percent (90%) of the mix will be rated Good (G) or Fair (F) for Weed Supression on the attached Cover Crop Table 1.



Table 1: Cover Crop - Common Species and Properties

Cover Crop	Full seeding rate lbs/acre/4	Seeding depth, inches	Reduce erosion	Increase soil organic matter	S cavenge nutrients	Biological N fixation	Suppress weeds	Provide supplemental hay	Provide supplemental grazing	Rocking depth / Plant water use ¹	Minimize / Reduce surface soil compaction	Minimize/ Reduce subsoil compaction	Seed size (Large or Fine)	Crop type and seeding dates ² / ₃	Winter survival	Salinity Tolerance	CN Ratio	Mycorrhizal fungi association	Seeds/lb	Shade Tolerance
Alfalfa	6.5	.25 - .75	G	G	G	Y	G	G	F	DH	G	G	F	CB	Y	P	L	M	210,000	F
Barley	50	.75 - 2.0	G	G	G	N	G	G	G	MM	G	F	L	CG	N	G	M	M	14,000	F
Brassica hybrids	7	.25 - .5	F	F	G	N	G	F	G	MM	G	G	F	CB	N	G	L	N	180,000	P
Buckwheat / 5	50	.5 - 1.5	P	P	F	N	F	P	P	SL	F	P	L	WB	N	P	L	N	19,000	G
Cabbage, African	5	.25 - .75	F	F	G	N	F	F	F	MM	G	G	F	CB	N	G	L	N	180,000	F
Camelina, Winter	3	.25 - .5	F	F	F	N	P	P	P	ML	P	F	F	CB	S	P	L	N	400,000	P
Canola	5	.25 - .75	F	F	G	N	G	F	F	MM	G	G	F	CB	S	G	L	N	140,000	F
Clover, Balansa	5	.25 - .75	F	P	F	Y	P	P	F	SL	P	P	F	CB	N	P	L	M	500,000	F
Clover, Crimson	15	.25 - .75	F	F	F	Y	P	F	F	SM	P	P	F	CB	S	P	L	M	150,000	F
Clover, Red	5	.25 - .75	G	F	F	Y	F	F	F	SL	F	F	F	CB	Y	P	L	M	275,000	G
Clover, Sweet	4	.25 - 1.0	G	G	F	Y	G	F	F	MM	G	G	F	CB	Y	F	L	M	260,000	G
Collards or Kale	5	.25 - .5	F	F	G	N	G	F	G	MM	G	G	F	CB	N	G	L	N	175,000	F
Corn	12	1 - 1.5	G	G	G	N	G	F	G	DH	G	G	L	WG	N	P	H	H	2,500	F
Cowpeas or Dry Beans	30	1 - 1.5	P	F	F	Y	P	P	F	SL	F	F	L	WB	N	P	L	M	4,000	F
Fava beans	75	1 - 1.5	F	F	F	Y	F	G	G	DM	F	F	L	CB	N	F	L	P	2,500	P
Flax	30	.25 - .75	F	F	F	N	P	P	P	SM	F	P	F	CB	N	P	H	H	80,000	P
Lentils	30	1 - 1.5	P	P	P	Y	P	P	P	SL	P	P	F	CB	N	P	L	M	20,000	P
Millet, hay	15	.5 - 1.0	G	G	G	N	G	G	G	SL	G	F	F	WG	N	P	M	H	180,000	P
Millet, proso	25	.5 - 1.0	G	G	G	N	G	G	G	SL	G	F	F	WG	N	P	M	H	80,000	P
Mustard	6	.25 - .75	F	F	F	N	G	F	P	MH	G	F	F	CB	N	P	L	N	140,000	P
Oats	70	.5 - 1.5	G	G	G	N	G	G	G	MM	G	F	L	CG	N	F	M	H	16,000	F
Peas	70	1.5 - 3.0	F	P	P	Y	F	G	G	SL	F	F	L	CB	N	P	L	M	3,500	F
Phacelia	4	.25 - .5	F	F	F	N	P	P	P	DH	F	P	F	CB	N	P	L	M	225,000	F
Radishes	8	.25 - .75	F	F	G	N	G	P	G	DH	G	G	F	CB	N	P	L	N	25,000	P
Rapeseed	5	.25 - .75	F	F	G	N	G	F	G	MM	G	G	F	CB	Y	G	L	N	140,000	F
Rye, Cereal	60	.75 - 2.0	G	G	G	N	G	G	G	MH	G	G	L	CG	Y	G	H	M	18,000	G
Ryegrass, Annual	15	.5 - 1.5	G	G	G	N	F	G	G	MM	G	F	F	CG	S	F	M	M	190,000	G
Safflowers	30	.5 - 1.0	F	F	G	N	F	P	P	DM	F	G	L	WB	N	F	M	M	15,000	P
Sorghum, Forage and Sudan Hybrids	15	.5 - 1.5	G	G	G	N	G	G	G	MM	G	G	L	WG	N	F	M	H	17,000	P
Sorghum, Grain	5	.5 - 1.5	G	G	G	N	G	G	G	MM	G	G	L	WG	N	F	M	H	17,000	P
Soybeans	35	1 - 1.5	F	P	F	Y	F	F	F	SM	F	F	L	WB	N	P	L	M	3,000	F
Sudangrass	20	.5 - 1.5	G	G	G	N	G	G	G	MM	G	G	L	WG	N	F	M	H	25,000	P
Sugar beets	4	.25 - .5	F	P	G	N	F	P	G	DH	G	G	F	CB	N	G	L	N	22,000	P
Sunflowers	7	.5 - 1.0	F	F	G	N	F	P	G	DM	F	G	L	WB	N	F	M	M	8,000	P
Sunn hemp	15	1.5 - 2.0	F	F	F	Y	F	P	F	DM	F	F	L	WB	N	P	L	M	15,000	P
Teff grass	5	.13 - .25	G	G	F	N	F	G	G	SM	G	F	F	WG	N	P	M	H	1M	N
Triticale	60	.5 - 1.5	G	G	G	N	G	G	G	MH	G	F	L	CG	Y	G	M	M	15,000	F
Turnips	4	.25 - .5	F	P	G	N	G	P	G	DH	G	G	F	CB	S	P	L	N	175,000	P
Vetch, Chickling	50	.5 - 1.5	F	F	F	Y	F	F	P	SL	F	F	L	CB	N	P	L	M	2,500	F
Vetch, Common	25	.5 - 1.5	F	F	F	Y	F	F	G	SM	F	F	L	CB	N	P	L	M	8,000	F
Vetch, Hairy	15	.5 - 1.5	G	F	F	Y	F	F	F	SM	G	F	L	CB	Y	P	L	M	14,000	G
Wheat, Spring	60	.5 - 1.5	G	G	G	N	G	G	G	MH	G	F	L	CG	N	G	M	M	15,000	F
Wheat, Winter	60	.75 - 2.0	G	G	G	N	G	G	G	MH	G	F	L	CG	Y	G	M	M	15,000	F