

Table 1: Cover Crop - Common Species and Properties

Cover Crop	1 Erosion Reduction	2 Increase soil organic matter	3 Capture, redistr- bute nutrients in the soil profile	4 Promote biologi- cal nitrogen fixation	5 Weed suppres- sion	6 Provide supple- mental hay	7 Provide supple- mental grazing	8 Rooting Depth / Plant Water Use /1	9 Minimize / reduce soil compacti on	10 Seed size (Large or Fine)	11 Crop Type /2	12 Seeding rate, lbs/acre	13 Seeding depth, inches	14 Salinity tolerance	15 C:N Ratio	16 Attract Beneficial Insects	17 Mycorrhizal fungi association	18 Tolerance to Frost
annual ryegrass	G	G	G	P	G	F	F	SM	P	F	CG	5	0.25 - 1.0	G	H	N	F	P
barley	G	G	F	P	G	F	F	MM	F	L	CG	48	0.75 - 2.0	G	M	N	P	P
berseem clover	P	P	F	G	F	F	G	MH	F	F	CB	4	0.25 - 1.0	F	L	Y	P	P
buckwheat	G	F	G	P	G	P	P	SL	P	F	WB	48	0.5 - 1.5	P	L	Y	P	P
canola	F	F	G	P	P-G**	F	F	MM	G	F	CB	5	0.25 - 0.75	G	L	Y	P	P
chickling vetch	F	F	F	G	P	F	F	DM	F	L	CB	50	1.5 - 3.0	P	L	Y	P	P
common vetch	F	F	F	G	G	G	G	SH	F	L	CB	20	1.0 - 1.5	F	L	Y	P	P
corn	G	G	G	P	P-G**	F	F	DH	G	L	WG	25	1.0 - 1.5	P	H	N	G	P
cowpea	P	P	F	G	G	F	F	SL	F	L	WB	50	1.0 - 1.5	P	L	Y	F	P
crimson clover	F	F	F	G	F	F	G	MM	F	F	CB	4	0.25 - 0.75	P	L	Y	G	P
flax	F	F	F	P	P	P	P	SM	P	F	CB	50	0.25 - 0.75	P	H	Y	G	G
hairy vetch	G	F	F	G	P	F	F	SM	F	L	WB	20	0.5 - 1.5	P	L	Y	F	G
horse bean	F	F	F	G	F	G	G	DM	G	L	WB	20	1.0 - 1.5	F	L	Y	P	F
kale	F	F	G	P	F	F	G	DH	G	F	CB	3	0.25 - 0.5	P	L	Y	P	G
kura clover	F	F	F	G	P	F	G	SH	F	F	CB	2	0.25 - 1.0	P	L	Y	P	G
lentil	P	P	F	G	P	F	F	SL	P	F	CB	50	1.0 - 1.5	P	L	Y	F	G
medic	P	P	G	G	F*	F	F	MM	F	F	CB	2	0.25 - 0.75	P	L	Y	F	G
millet	G	G	F	P	G	G	F	SL	F	L	WG	15	0.25 - 0.75	F	M	N	G	G
mustard, tame	F	F	F	P	G	F	F	MH	F	F	CB	5	0.25 - 0.75	P	L	Y	P	F
oat	G	G	F	P	F	G	F	MM	F	L	CG	65	0.5 - 1.5	P	M	N	P	F
pea	P	P	P	G	F	G	F	SL	P	L	CB	75	1.5 - 3.0	P	L	Y	F	F
phacelia	F	F	F	P	F	P	F	SL	P	F	CB	5	0.25 - 0.75	P	L	Y	F	G
radish	P	P	G	P	G	P	G	DH	G	F	CB	4	0.25 - 0.5	P	L	Y	P	F
Red beet	P	P	G	P	F	P	F	DM	G	L	CB	4	0.5 - 0.75	F	L	Y	P	F
red clover	F	F	F	G	G	F	G	DM	F	F	CB	3	0.25 - 0.75	P	L	Y	G	F
safflower	F	F	G	P	F	F	G	DH	F	L	WB	30	1.0 - 1.5	F	M	Y	F	F
sorghum	G	G	G	P	G	G	F	MM	G	L	WG	5	0.5 - 1.5	P	M	N	G	F
soybean	P	P	F	G	P-G**	F	F	SM	P	L	WB	50	1.0 - 1.5	P	L	Y	F	F
spring rye or wheat	G	G	G	P	G	F	F	MH	F	L	CG	90	0.5 - 1.5	F	M	N	P	G

Table 1: Cover Crop - Common Species and Properties

Cover Crop	Erosion Reduction	Increase soil organic matter	Capture, recycle, redistribute nutrients in the soil profile	Promote biological nitrogen fixation	Weed suppression	Provide supplemental hay	Provide supplemental grazing	Rooting Depth / Plant Water Use /1	Minimize / reduce soil compaction	Seed size (Large or Fine)	Crop Type /2	Seeding rate, lbs/acre	Seeding depth, inches	Salinity tolerance	C:N Ratio	Attract Beneficial Insects	Mycorrhizal fungi association	Tolerance to Frost
subterranean clover	F	F	F	G	G	F	G	MH	F	F	CB	4	0.25 - 1.0	P	L	Y	F	F
sudangrass, sudan-sorghum hybrid	G	G	G	P	G	G	G	MM	G	L	WG	25	0.5 - 1.5	F	M	N	G	F
sugarbeet	P	P	G	P	F	P	G	DH	G	F	CB	2	0.25 - 0.5	G	L	Y	P	P
sunflower	F	F	G	P	F	P	G	DM	G	L	WB	4	0.5 - 1.0	F	M	Y	F	P
sun hemp	F	F	G	G	G	P	P	DH	G	F	WB	5	0.5 - 1.0	P	L	N/A	F	P
sweet clover	G	F	F	G	F*	P	F	MM	F	F	CB	4	0.25 - 1.0	F	L	Y	F	G
Teffgrass	G	G	F	P	G	G	G	SH	P	F	WG	5	0.25 - 0.5	F	H	N	G	G
triticale	G	G	G	P	G	F	F	MH	F	L	CG	90	0.5 - 1.5	G	M	N	P	G
turnip	P	P	G	P	G	P	G	DH	G	F	CB	4	0.25 - 0.5	P	L	Y	P	P
turnip - psala	F	F	G	P	F	P	G	DH	G	F	CB	4	0.25 - 0.5	P	L	Y	P	F
white dutch clover	F	F	F	G	P	F	G	MH	P	F	CB	1	0.25 - 1.0	P	L	Y	P	G
winter canola	F	F	G	P	P-G**	F	F	MM	G	F	CB	5	0.25 - 0.75	G	L	Y	P	F
winter rye or wheat	G	G	G	P	G	F	F	MH	F	L	CG	90	0.75 - 2.0	P	M	N	P	F

/1 Rooting Depth/Water Use
 SL = Shallow rooted/Low water use
 SM = Shallow rooted/Medium water use
 SH = Shallow rooted/High water use
 ML = Medium rooted/Low water use
 MM = Medium rooted/Medium water use
 MH = Medium rooted/High water use
 DL = Deep rooted/Low water use
 DM = Deep rooted/Medium water use
 DH = Deep rooted/High water use

/2 Crop types
 CG = cool season grass
 CB = cool season broadleaf
 WB = warm season broadleaf
 WG = warm season grass

Ratings
 L = Low
 M = Medium
 H = High
 N/A = Not Available
 G = Good
 F = Fair
 P = Poor

*These species are considered invasive on rangeland, avoid use in fields adjacent to rangeland.
 **Poor weed competitor, but herbicide-tolerant varieties are available.

Table 1 is compiled from several sources listed below and in the ND NRCS Cover Crop Design and Installation Guide reference section and from field observations across North Dakota.

- Managing Cover Crops Profitably, 3rd edition, SARE
- Cover Crop Chart (v. 1.3) produced by the USDA-ARS Northern Great Plains Research Laboratory (NGPRL), Dr. Mark Liebbig.
- The USDA-NRCS PLANTS Database
- Midwest Cover Crops Council website
- USDA-SARE publications and website
- NDSU-Ext. Service data and publications
- Other relevant, peer-reviewed journal articles on cover crops from multiple sources throughout the U.S. and Canada.

Information on specific crops is occasionally generalized and/or approximate, and may not reflect performance in on-farm conditions. NRCS does not guarantee the performance of specific crops based on information provided within the Cover Crop Chart.