

Prevented planting options

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The spring of 2011 has been wet and cold in many areas in North Dakota and Minnesota. Because of this, many acres were not planted and growers need options for prevented planting fields. Farmers must be aware that if a cover crop is planted it cannot be harvested, grazed, or hayed before November 1st without reduction in insurance payment. Haying or grazing prior to November 1st will result in a 65 percent reduction in the prevented planting indemnity payment. Haying or grazing of the cover crop after November 1st is permitted. Always contact your insurance agent to consult about your intentions for the prevented planting acres.

One of the choices is leaving the soil fallow, but this is not recommended because of increased soil erosion and potential nutrient leaching. Planting cover crops will protect the soil from erosion, use excess moisture, remobilize nutrients from deeper layers in the soil, and add carbon, organic matter, and nitrogen to the soil, the latter only if legumes are used.

How to choose a crop for prevented planting acres depends on the farming operation. If forage is needed in the fall, forage brassicas such as forage radishes or turnips are a good choice since they are frost tolerant and foliage will remain green well into November, providing excellent quality grazing forage for the late fall.

If the forage is not needed, a cover crop mixture to protect soil would be recommended. A mixture should have at least three crops in the mix, one to provide cover and organic matter avoiding soil erosion and using excess moisture, a legume to fix nitrogen, and a deep rooted or tap root crop to reduce compaction in the soil and increase water infiltration.

Choices of cover crops are many, including a warm-season crop such as forage sorghum or millet for dry matter production, radishes to reduce soil compaction and increase water infiltration, a legume (field peas, hairy vetch, or other) to fix nitrogen would be the most useful ones. Legumes seed in the mixture should be inoculated with the correct crop specific rhizobia species. For pea and vetch *Rhizobium leguminosarum* biovar *viceae* should be used.

Preliminary data of studies conducted in eastern North Dakota in 2010 indicate cover crops can add 0.5 to 1.5 ton/acre of dry matter when planted the first week of August. Forage pea 'Arvika' had the highest yield of all cover crops evaluated (Table 1). The total N uptake (amount of N in the above ground plant tissue) for the peas was 112 lbs/acre. If we subtract the amount of nitrogen absorbed by the non-legume cover crops, which is coming from the nitrogen in the soil, we can estimate the amount of atmospheric nitrogen fixation by the forage pea to be about 60 lbs/acre in only 60 days of growth. The other two legumes evaluated had lower biomass and nitrogen fixation.

The forage turnips, Pasja and Purple top, had dry matter yields of 1.4 and 1.1 tons/acre, respectively. The nitrogen uptake was of about 60 lbs/acre. These deep rooted cover crops help utilize nutrients from deeper layers in the soil and bring them to the soil surface for the next crop.

The forage quality of all cover crops was excellent. Legumes, as expected, had higher protein content and radishes and turnip had very high digestibility of the fiber (Table 2). Radishes and turnips would need supplemental fiber, straw or other to account for the reduced fiber of this forage. When considering the short growing period of these cover crops and the high forage quality, cover crops can be considered an excellent forage sources for late fall grazing in North Dakota.

Table 1. Cover crops soil characteristics before planting, plant height and biomass yield of eight cover crops averaged over two locations, Fargo and Prosper, ND in 2010.

Cover crop	Soil pH	O.M. %	P ppm	K ppm	Plant height cm	Biomass yield ton/acre	Nitrogen uptake lbs/acre
Forage pea (Arvika)	7.3	4.8	16	310	77	1.42	112
Austrian winter pea	7.5	4.6	17	286	30	0.86	80
Hairy vetch	7.4	4.5	19	303	24	0.85	76
Forage turnip (Pasja)	7.4	4.8	21	300	31	1.40	59
Purple top turnips	7.5	4.8	15	345	29	1.14	61
Forage radish (Daikon)	7.5	4.7	14	280	30	0.77	61
Check (no cover crop)	7.2	4.9	18	294	0	0	0

OM = Organic matter.

Seeding date, 9 August 2010, previous crop oat (*Avena sativa*).

Table 2. Cover crops forage quality averaged over two locations, Fargo and Prosper in 2010.

Cover crop	CP	NDF	ADF	ADL	IVDMD	NDFD	TDN	RFV	RFQ
	-----% of dry matter-----								
Forage pea (Arvika)	25	32	27	4.4	74	77	68	199	122
Austrian Winter pea	29	23	17	2.4	82	86	70	308	111
Hairy vetch	28	27	21	3.9	80	83	68	253	103
Forage turnip (Pasja)	13	16	12	0.9	91	92	70	471	155
Purple top turnips	17	16	13	1.0	90	91	68	475	157
Forage radish (Daikon)	16	18	15	1.2	89	91	66	399	150

Web Links for more information:

1. Prevented Planting Fact Sheet, indicates the options of cover crops in flooded land.
<http://www.rma.usda.gov/pubs/rme/ppflood.pdf>
2. 2011 Basic Provisions for prevented planting
<http://www.rma.usda.gov/policies/2011/11-br.pdf>

3. Summer annual grasses for cover crops for prevented planting acres and Prevented Planting Row Crop Acres – Which cover crops can help?

<http://plantcovercrops.com/prevented-planting-row-crop-acres-what-can-cover-crops-help/>

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