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Fall Grazing of Cover Crops

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If you are considering planting a cover crop after grain harvest, consider whether the planting might also serve as fall forage for livestock. Cover crops planted after harvesting a major cash crop can serve multiple benefits. Not only can they help prevent soil erosion, provide organic matter, and scavenge nitrogen, but an additional benefit can come from using cover crops as forage for livestock grazing. Nutrient content of these forages is generally quite high, meeting or exceeding the nutritional needs of dry or lactating cows and growing calves. With good ground moisture conditions, forage production can be high enough to support a significant amount of grazing.

A variety of species and mixes can be used for cover crops based on multiple goals. For example, forage turnips and radishes (brassicas) can produce a large amount of biomass for grazing and also scavenge nitrogen and help prevent soil compaction. Comprehensive information about a wide variety of crops that may be used as cover crops in the northern plains is provided on the [USDA-ARS Northern Great Plains Research Laboratory \(http://www.ars.usda.gov/main/docs.htm?docid=20323\)](http://www.ars.usda.gov/main/docs.htm?docid=20323) website. A [guide to cover crop selection \(http://www.mccc.msu.edu\)](http://www.mccc.msu.edu) for the Midwest has been developed by the Midwest Cover Crop Council. This latter guide was developed for areas east of South Dakota, but may also be useful in the eastern part of the state.



<https://igrow.org/up/articles/9754-orig.png>

Above: Forage radish in a cover crop mix.

Both the tops and bulbs of brassicas are nutritious and will be eaten by livestock, although their use may be affected by weather conditions. Brassicas often contain 15 – 25% crude protein and 75 – 85% TDN. The tops are highest in protein while the bulbs are highly digestible. Brassica forages can be very high in moisture and low in fiber so that it can be difficult for livestock to consume enough dry matter. When grazing radishes or turnips, additional forages may be needed to be available either in the forage mix itself, or as dry hay, to help livestock consume enough nutrients. Usually no more than about two-thirds of the diet should be brassicas. Adding grass-type forages like millets, sorghum-sudan, oats and annual rye to mixes can help provide dry matter for grazing. Legumes such as field peas and lentils will both fix nitrogen and provide high quality forage for grazing.

A survey of more than 700 producers growing cover crops in the upper Midwest identified establishment as the greatest challenge to cover crop use. Soil moisture is critical to germination and initial growth of cover crops following grain crop harvest. Shading provided by the crop canopy minimizes soil surface evaporation. Canopy removal at harvest accelerates moisture loss. Planning and preparation that facilitates seeding immediately following harvest will enhance successful cover crop establishment.

Because of generally dry fall conditions in South Dakota, establishment and total yields of forages may be somewhat less than reported in areas of the country with earlier harvest dates or more fall precipitation. In a study conducted in 2003 and 2004 at SDSU, turnips planted after oats on August 1 produced about 3950 lbs of dry matter per acre. Delaying planting until August 15 reduced yields to 390 lbs/acre in 2003 and 2101 lbs/acre in 2004.

Livestock contributes significantly to nutrient cycling. Grazing can speed up break down of plant tissues and affect rates of nutrient release. In addition, grazing livestock excrete nitrogen in their manure that can result in a redistribution of nutrients within a field. Several research studies have shown little impact of grazing cover crops on soil compaction. This can be affected by moisture conditions and the amount of residue in the field. Tillage before the next crop and freeze-thaw cycles after grazing may alleviate any minor effects of grazing on soil compaction. Additionally, benefits associated with grazing from nutrient cycling and the added feed resource may outweigh any negative impacts that might occur.

Several precautions should be taken in grazing certain cover crops. Because of their nitrogen scavenging ability, brassicas can be high in nitrates and recommendations regarding the feeding of high nitrate forages should be followed. Adapt livestock gradually to grazing brassicas and don't

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turn them out hungry. Other forages, such as oats and millet can also contain high levels of nitrates if grown under dry conditions. Brassicas can also contain high levels of glucosinolates, which affect thyroid function, so be sure to provide iodized salt during the grazing period.

Incorporating cover crop grazing into a crop rotation does take planning. Herbicides used in the previous crop need to be considered to ensure that they will neither inhibit forage growth nor limit grazing. Grazing is not currently considered a means of termination of cover crops so check with NRCS or your crop adviser to be aware of any implications grazing may have on crop insurance or program eligibility.

Pastures dominated by cool season plants are typical in the northern plains. Nutritional quality of these plants decreases rapidly by early summer. Grazing of cover crops provides an alternative of much greater nutritional value which will promote improved livestock performance. Currently favorable moisture conditions and record high livestock prices suggest this may be an opportune time to consider planting cover crops for fall grazing.

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