Forage Brassicas for Fall Grazing

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Forage brassicas, such as rape, kale, turnips, and swedes, are high yielding, high quality, fast growing crops. Since they are able to withstand cold temperatures, they are particularly well adapted to late fall/early winter grazing. Tops can tolerate temperatures to 15-20˚F and the bulbs are 5-10˚F hardier. These crops are a good option for extending the grazing season in the upper Midwest, maintaining quality (if not heading) well into freezing temperatures and providing grazing into November or early December.

Brassicas planted August 13 and pictured November 5 (Herbert S.J. and A.M. Hashemi, University of Massachusetts).

Livestock utilize the above ground parts (stems and leaves) of rape and kale and all parts (stems, leaves, and roots) of turnips and swedes. Brassicas are a high quality forage if harvested before heading. Above ground parts normally have 20-25% crude protein (CP) and 65-80% total digestible nutrients (TDN). The roots of turnips and kale usually have 10-14% CP and 80-85% TDN. Yields of turnips range from 4,000-6,000 lbs of dry matter (DM)/ac with 2,000-4,000 lbs coming from the tops and the remainder coming from the roots.

Brassicas can provide grazing at any time during the summer or fall, depending on seeding date. Turnips grow fast and can be grazed as early as 70 days after planting. They reach near maximum production in 80-90 days. The proportion of top growth to roots can vary from 90% tops/10% roots to 15% tops/85% roots. Some hybrids have fibrous roots that are not readily grazed by livestock. Turnips can be seeded any time soil temperature reaches 50˚F until 70 days prior to a killing frost. For fall grazing, seeding should be done from mid-July through mid-August. Some of the most promising varieties are 'Green Globe', 'York Globe', and 'Sirius'.

Swedes, likes turnips, produce large edible roots. Swedes yield more than turnips but require 150-180 days to reach maximum production. Swedes usually produce a short stem but can have stems up to 2½' long when grown with tall crops, which shade the swede. Swedes would generally be recommended for late-summer seeding. Some of the most promising varieties are 'Calder' and 'Sensation'.

Rape is a multi-stemmed crop with fibrous roots. Stem height, diameter, and palatability vary with variety. Yield is maximized with a 180 day growth period for many varieties, but most hybrids produce greatest yields when allowed to grow 60 days before first harvest and 30 days before second harvest. The most promising varieties are 'Rangi' (which retains it leaves longer than most varieties), 'Fora', 'Wairoa', and the hybrid, 'Tyfon'.

Kale varieties vary greatly in establishment characteristics, stem development, and time required to reach maturity. Stemless types reach a height of about 25"; the narrow stem types reach a height of 60" with primary stems up to 2" in diameter. Stemless kale reaches maturity in about 90 days allowing a second harvest, while stemed varieties reach maturity in 150-180 days. The most promising varieties are 'Marrow-stem' and 'Gruner'.

Establishment

Brassicas require good soil drainage and soil pH should range 5.3-6.8. Brassicas can be no-tilled into a sod provided it has been killed with glyphosate, reducing insect problems. They can also be seeded into wheat stubble. Clean till seedings work well but may have increased insect pressure. Use 1.5-2 lbs/ac of seed for turnips and swedes and 3.5-4 lbs/ac for rape and kale. Drill the seed on 6-8" row spacing and place seed no more than 0.5" deep.

Fertilizers should be applied at the time of seeding to give the brassicas a competitive edge on weeds. Apply 75 lbs/ac nitrogen. Fertilize with phosphorus and potassium similar to what would be applied for small grains. Boron may also be needed.

Grazing

Brassica crops can cause animal health disorders if not grazed properly. The main disorders are bloat, atypical pneumonia, nitrate poisoning, hemolytic anemia (mainly with kale), hypothydroidism, and polioencephalomalcia. The disorders can be avoided by following these two management practices:

1. Introduce grazing animals to brassica pastures slowly (over 3-4 days). Avoid abrupt changes from dry summer pastures to lush brassica pastures. Do not turn hungry animals, that are not adapted to brassicas, into a brassica pasture.

2. Brassica crops should not constitute more than 75% of the animal's diet. Supplement with dry hay if continually grazing brassicas or allow grazing animals to access grass pastures while grazing brassicas.

Grazing can begin when the forage is about 12" tall (70-90 days after planting). The pasture should be grazed for a short time period and the livestock removed to allow the brassica to regrow. Rape may be grazed to a 10" stubble height. One to four grazing periods may occur, depending on planting date and growing conditions. Turnips may be grazed to the ground the first time and both tops and beets grazed in the second grazing. It is usually not necessary to dig the beets, unless the soil is very hard.

When possible, brassicas should be strip grazed. Strip grazing, with a break wire in front of and behind the animals can be used to control consumption, allow regrowth, prevent wastage, and conserve available DM.

The forage quality of the brassicas is so high that it should be considered similar to concentrate feeds and precautions should be taken accordingly. Livestock should not be hungry the first time they are put on pasture so they do not gorge themselves. A lower quality hay should be made available to provide some fiber in the animals' diet.

Finally, do not grow brassicas in the same field for more than 2 consecutive years as diseases will build up to reduce stand and yield.