

THE FORAGER

Agronomics with livestock in mind!

CONSIDER FORAGE ALTERNATIVES AS A QUALITY FEED SOURCE ~

There is a lot of talk these days about forage sources, with the onrush of interest in 'alternative fuels' such as ethanol, which uses mostly corn as a base-ingredient in its manufacture. This has created an interest with some producers in growing corn for sale to this industry, rather than into a feed source for livestock. Economists indicate that this shift from feedstuff to fuel may create shortages (of forage) in some areas. While this may be a concern, we can always consider what alternatives might be available – and just what these may offer as a feed/forage source for livestock.

In research by Dr. Dan Undersander (U of WI Extension Service Forage Agronomist), he has explored the use of forage brassicas as a viable alternative for feed livestock. Feeding these forages is a very common practice in many other countries and has started to promote some interest in the USA in recent years. Forage brassicas include such species as rape, kale, turnips, and many other forage potentials. Most are high yielding, high quality, and fast growing crops. The above-ground parts (stems, leaves) of rape and kale, for instance, and all parts (stems, leaves, roots) of turnips and swedes can be utilized by livestock. Brassicas are high quality forage if harvested *before* heading. Above ground parts normally have 20-25% crude protein and 65-80% TDN. The roots of turnips and kale usually have 10-14% crude protein and 80-85% digestibility. In addition to ensiling, brassicas can also provide grazing at any time during the summer or fall, depending on seeding date. A promising use may be for late fall grazing. These crops maintain quality, if not heading, well into freezing temperatures and may be grazed into November in some areas. Here is information on many of the more common ones:

- Turnips grow fast and can be grazed as early as 70 days after planting, reaching near-maximum production levels in 80-90 days. The proportion of top growth to roots can vary a great deal. Some hybrids have fibrous roots that are not readily grazed by livestock. Turnips can be seeded any time from when soil temperature reaches 50° (F) until 70 days prior to a killing frost.
- Swedes, like turnips, produce large, edible roots, yielding more than turnips. However, they require 150-180 days to reach maximum production. They usually produce a short stem, but can have stems up to 2½ feet long when grown with tall crops, which shade the swede. Swedes are generally recommended for late-summer seeding.
- 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 some varieties, while most hybrids, on the other hand, produce the greatest

(continued in next column)

yields when allowed to grow 60 days before the first harvest and 30 days before the second harvest.

- Kale may vary greatly in establishment characteristics, stem development, and time required to reach maturity. Stemless types reach a height of about 25 inches; the narrow stem types reach a height of 60 inches with primary stems up to 2 inches in diameter. Stemless kale reaches maturity in about 90 days, allowing a second harvest, while varieties that develop stems reach maturity in 150-180 days.

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

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

Brassicas may cause animal health disorders if not fed or grazed properly. Principle disorders may include bloat, atypical pneumonia, nitrate poisoning, hemolytic anemia (mainly with kale), hypothyroidism, and polioccephalomalacia. Disorders can largely be avoided by the following two management practices:

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

(b) 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 inches tall (70-90 days after planting). The pasture should be grazed for a short time period and the livestock removed to allow for re-growth. The forage quality of brassicas is so high that it should be considered similar to concentrate feeds and precautions taken accordingly. A last note, do not grow brassicas in the same field for more than two consecutive years as diseases will build up to reduce stand and yield.

(edited from an article by D. Undersander, U of WI)



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