

Forage and Feeding Considerations Canola as Livestock Feed



Using Canola Forage as Alternate Feed

Cattle will eat canola plants and canola can provide an adequate feed source. But if you are thinking of cutting canola for feed, you should compare all costs and opportunities for seed versus feed.

Weather events that often make farmers decide to use canola as feed include late-season hail and drought. Drought reduces canola yield potential and increases the demand for alternative feed sources. Drought can also drive up canola seed prices, which can maintain profitability for canola crops harvested for grain – even if yields are quite low.

Before making a decision to cut a canola crop for silage or hay, follow these steps:

1. Calculate your return for canola harvested for grain, considering yield potential and price. A 10 bushel per acre crop could produce \$200 per acre at July 2021 prices. Find out what the likely harvest-time price is and how that compares to the price for hay.
2. Talk to your grain buyer, especially if your signed contracts require delivery. Review your contracts' commitments. A 10 bushel per acre canola crop that covers at least part of a contract will reduce the amount that needs to be replaced to fulfil an obligation.
3. Talk to your Manitoba Agricultural Services Corporation (MASC) crop insurance adjuster. If you're making an insurance claim, the adjuster should assess the crop before you consider the silage or hay option.
4. Check the labels for all pesticides used on the crop. Some products used on canola have restrictions such as "Do not graze the treated crop or cut for hay." Because canola is not a common feed crop, the Pest Management Regulatory Agency (Canada) and Environmental Protection Agency (U.S.) do not require feed data, so companies may not have data to support feed use after their products are applied.
5. Look at the crop stage and estimate the biomass. This will determine the potential feed value per acre. Canola feed value drops after the late flowering and early pod stages.
6. Consider the loss of nutrients that occurs when removing all above-ground biomass. This will have to be replaced with added fertilizer.
7. Consider if cattle producers need help. Feed shortages add to the stress of drought for livestock producers. This might factor into a decision to leave canola standing or cut it for forage.

Canola Feed Value

Feed value tends to be higher when canola is cut at full bloom to early pod stage when plants are still green and leafy. Here are a few feed components to consider when feeding canola.

Crude Protein

“Crude protein for canola, cut at full bloom to early pod, can average from 14 to 17 per cent,” said Alberta beef feed consultant Barry Yaremcio. The comparison data below comes from samples sent to Norwest and Bodycote Lab between 2000 and 2005. See Table 1. Canola protein can drop to 10 to 12 per cent at full pod because of lost leaf and flower biomass.

Table 1: Crude protein (CP) and total digestible nutrients (TDN) of canola compared to traditional forages

	Canola Silage	Alfafla Silage	Canola Greenfeed	Grass-Alfalfa Hay
No of samples	8	193	14	204
Minimum CP%	9.3	7.1	8.2	5.9
Maximum CP%	23.5	28.1	16.4	28.2
Average CP%	14.7	19	12.3	13.2
No of samples	8	196	17	207
Minimum TDN%	48.1	44.7	47.0	46.3
Maximum TDN%	63.8	73.2	70.1	69.0
Average TDN%	59.8	59.6	56.3	59.2

Adapted from www.gov.mb.ca/agriculture/crops/crop-management/forages/pubs/beefbisonsheep.pdf

Total Digestible Nutrients

Lab results show the average total digestible nutrients (TDN) is 59 per cent for canola silage and 56 per cent for greenfeed, similar to grass hay.

Nitrates

After a light frost or hail injury to a crop, nitrates begin to accumulate and peak three to four days later. With a killing frost, the plant is dead and nitrates do not accumulate, but they are locked in at this time. Ensiling tends to reduce nitrate levels. Get a feed test before using any new or unusual feed source. Visit www.manitoba.ca/agriculture/livestock/beef/pubs/managing-nitrate-contaminated-feeds.pdf for updated information on nitrates.

Sulphur

Prolonged feeding of canola may hinder cattle's use of trace minerals, particularly copper and selenium whose absorption is inhibited by sulphur. If you use canola in your feeding strategy, you should pay particular attention to providing sufficient quantities of these trace minerals. Cattle that consume excessive amounts of sulphur may also experience suppressed appetites and reduced rates of gain. As sulphur concentrations increase in the rumen, thiamine (vitamin B1) production becomes impaired which may cause scouring, and ultimately, thiamine deficiency. This may instigate polioencephalomalacia (PEM), a dietary disease that causes lesions to form in the brain. According to North Dakota State University, sulphur levels of canola can range from 0.5 to 1.3 per cent on a dry-matter basis, while sulphur levels above 0.4 per cent will affect rumen bacteria in cattle, which can lead to serious illness. Get a feed test to know how to blend canola silage with other feed sources. Limiting canola forage in the ration mix will also help prevent issues with sulphur.

Oil

Mature canola seed is not appropriate as a sole feed source. While canola oil is used to boost energy in feed rations, more than seven per cent oil in a cow's diet prevents them from turning in the rumen. This amount of oil causes an impaction or feed blockage because of loss of traction as it sits in the stomach. Mature canola seeds in hulled or regrown feed could contain 40 per cent oil. This would only be a concern if mature canola seed represents a significant part of the diet.

To test your feed quality, use a feed probe and send the sample for a feed analysis. Check with your chosen lab for their sampling and submitting procedures.

Price of Canola Forage

Manitoba Agriculture staff estimate that canola silage would have a similar value to beef hay on a dry matter basis. If beef hay at 15 per cent moisture is eight cents per pound, a canola silage bale at 50 per cent moisture would be around 4.7 cents per pound.

Yield

One way to estimate forage yield is to cut and weigh all the plants in a square foot and do that a few times throughout the field. Then multiply by 43,560 square feet to get yield per acre. This provides an estimate, but mass will be lost as cut plants dry down.

The manual from Australia called *Procrop Canola Growth and Development* has a section on cutting a failed crop. If total dry matter yield is 1,818 kilograms per hectare (0.74 tonnes per acre) at late flowering, it will drop to 1,181 kilograms per hectare (0.48 tonnes per acre) over the next six weeks. In that time, dry matter digestibility also drops from around 69 per cent to around 59 per cent.

Contact Us

For more information, contact the department:

- Online www.manitoba.ca/agriculture
- Email agriculture@gov.mb.ca
- Phone 1-844-769-6224

When to Cut

Forage quality is best when cut at early-to-full bloom to early pod stages. Quality declines as canola matures and leaves drop.

Silage

Canola is similar to barley for cutting, chopping and packing or bagging, though it may take an extra day to dry down to 60 to 65 per cent moisture content – a day longer than cereal silage. Canola silage tends to have a darker colour and perhaps a less appealing smell than barley silage. While cattle are reported to adjust to canola silage easily, blending with other feed sources, especially when first introducing canola to cattle, is recommended.

Hay

Brassica plants like canola may take four to six days to dry down to proper moisture levels for baling dry, which is 16 to 18 per cent moisture. Crimping the forage ensures faster and more uniform drying. If canola is cut near maturity, its feed value is less than cereal straw. Cattle do not find this type of feed palatable and it is best used as bedding unless it is processed and mixed with other hay.

Information on this factsheet was compiled by Manitoba Agriculture, the Canola Council of Canada, the Government of Saskatchewan, Yaremcio Ag Consulting Ltd., North Dakota State University, and the New South Wales Department of Primary Industries.