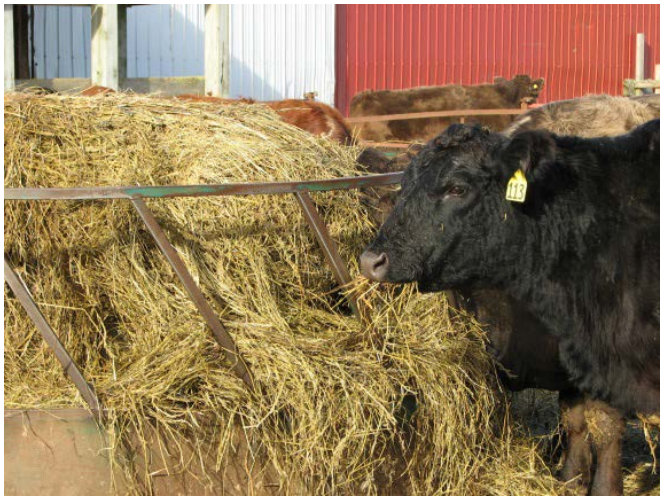
Grass-Fed Beef Initiative Extension Series

Fact Sheet 5 of 11

Forage Management Practices to Produce High Quality Conserved Forages for Finishing Beef

To get grass-finished beef to market at 20-24 months of age with a weight of 1100-1200 lbs (500-565 kg), you will need an ample supply of high quality stored forage. The following factors help produce the quality of stored forage required to achieve feeder gains of 1.5-2 lbs (0.7-1 kg) per day.



Time of Cut

With the majority of our conserved forage supply and feeding potential coming from the first cut harvest, the timing of this harvest is by far the most important factor in determining stored forage quality. Time of cut really impacts on fibre digestibility, intake, and forage energy. Local research shows digestible energy and animal intake drops by 0.5 per cent per day in June. For optimum yield and feeding quality, first cut grass should be taken at the late boot to early head emergence, when the ADF value is 29-32 per centand the NDF value is 50-58 per cent. (41-45 per cent NDF values for high percentage alfalfa fields).

In cutting high percentage alfalfa stands, keep in mind you are starting to lose significant first cut digestibility and feeding performance even before the early bloom stage. Research by Dr. Jerry Cherney from Cornell University suggests that first cut harvest should be based on alfalfa height in conjunction with calendar date. Dr. Cherney says that first cutting of a 70:30 alfalfa-grass mixture should reach the target 41 per cent NDF at an alfalfa height of 28 inches (70 cm).

In a first cut 50:50 alfalfa-grass crop you reach the 44% NDF quality at an alfalfa cutting height of 23 inches (60 cm).

The optimum time of first cut may vary by 10-15 days across Nova Scotia. For example, high quality and good yielding forage harvesting in the Annapolis Valley will be late May and first week in June, while in eastern Nova Scotia this harvest usually occurs between June 10-18t. Forage species such as orchardgrass, reed canarygrass and alfalfa decline in quality more quickly than the fescues, timothy and clovers; however, the regrowth speed of an alfalfa-tall fescue mixture is much quicker than a timothy-red clover, which gives the potential for a three cut system with alfalfa mixtures, providing the soil drainage and pH will support long term alfalfa survival.

Harvest First Cut as Silage

To get first cut forage off quickly and minimize quality loss from rainfall while in the wilting swath, it is essential to use a silage harvesting system. Silage harvesting systems are either precision chopped or high moisture baled forage systems. The precision chopped approach has the potential for high harvesting rates and more uniform quality. The limitations with the precision chopped system is the big equipment costs associated with a high horsepower tractor, precision harvester and hauling equipment, plus the need to harvest large amounts of forages to quickly fill bunker silos. Because of these factors, this system is often unaffordable for smaller farms.

The silage system of choice on most Nova Scotia beef farms is a round bale system that stores bales at 50-60 per cent moisture. The round bale system is well suited to harvesting smaller tonnage amounts. The round bale silage system involves tubers, tube-line wrappers or individual bale wrappers, all which have higher plastic costs than a precision chopped system.

Round bales need to be made uniformly and tight, which results from proper time of cut, using the proper baler and baling technique (some balers are equipped with choppers to produce tighter bales and perhaps improve animal intake). The ideal moisture for baling is between 50 and 60 per cent, which is best for fermentation and avoids heat damage or molds that can occur if baled too dry. Moisture

content greater than 65 per cent increases the risk of butyric acid type of fermentation and clostridia spoilage. Round bales should be wrapped within 4-6 hours of baling, with at least 6 preferably 8 mil of plastic (5-6 wraps of 1.2mil plastic).

Speed of Wilt

Rapid wilting after cutting is critical to minimize the loss of sugars from this forage that is still respiring as drying occurs in the swath. Forages with higher plant sugars or soluble carbohydrates will have greater digestible energy and result in a better fermentation. Cutting the crop early and laying it down in a wide swath (85 per cent of cutter-bar width) to be raked back into a single or double windrow for baling will help speed up wilting.

Other Forage Management Considerations

There are numerous other factors that can improve forage productivity and feeding performance. For example:

a) Having more alfalfa or clover content will increase protein levels in forage, which is very important for weaned calves coming off pasture and going onto stored forages.

b) Providing adequate soil fertility to forage fields will increase quality, yield and competitiveness with weeds.

c) Forage testing and knowing the location and amounts of the different qualities of stored forage. d) Utilizing proper grazing management techniques so weaned calves come off pasture in good shape to adjust to a stored forage (and cows also so they can go on lower quality hay during their middle trimester).

e) Investigating whether there are more affordable custom silage harvest or second cut alfalfa-grass hay purchase options available in your community (as opposed to owning harvesting equipment or growing all the forage).

For More Information

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