

Feed Sampling and Analysis for Beef Cattle

Why feed test?

- Determine feed quality.
- Determine if supplementation is required and how much should be provided.
- Prevent or identify potential problems within the feed, i.e., nitrates, sulfates, mycotoxins or other minerals or nutrients.
- Accurately price feed when buying or selling versus relying on weight alone.
- Develop appropriate rations that meet the nutritional needs of your beef cattle.

Sampling Baled Forages

Feed testing requires collecting a representative sample of the field. Samples should be taken randomly from 10 per cent of bales that represent different locations within that field. For best results, forage samples should be taken using a forage probe. Forage probes can cut deep into the bale resulting in a more uniform sample. When using a forage probe, it is best to take the sample from the side of the round bale. Ensure samples are mixed thoroughly to get a consistent average sample, bag different forages and

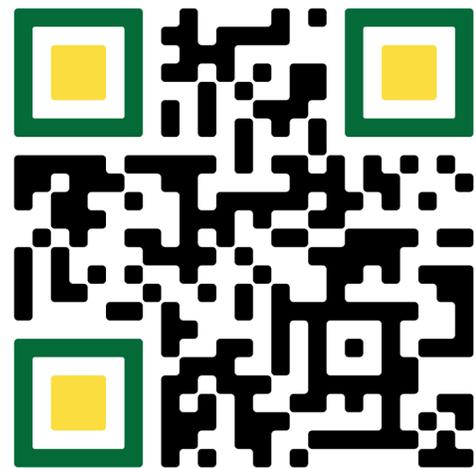
fields separately. When bagging samples, fill a large resealable bag, label and seal. Forage probes are available for use at your local regional ministry office.

Sampling Silage

Samples of cured silage should be taken from 15 to 20 locations in the silo, pit or tube, but never from a surface that has been exposed to air. A two-liter bag should be filled and after all the air has been squeezed out the bag should be securely sealed so that no air can re-enter. The presence of air in the sample will allow spoilage to occur, giving an inaccurate analysis at the lab.

Types of Feed Tests

Choosing an analysis package depends on the class of animal and rations that will be formulated. Special analyses can also be performed if molds, mycotoxins or nitrates are a concern. Producers should contact a livestock specialist or the laboratory for specific information. A full listing of feed labs is available on our website.



Scan the QR code to watch a video feed and forage testing.

Nutrient Requirements for Cattle

Nutritional needs vary greatly depending on the age of cattle and whether you are growing, finishing, breeding or maintaining cattle. Body condition, hide thickness and hair coat can affect nutrient requirements of cattle as can weather conditions like temperature and wind speed or environmental factors such as mud depth, bunk space or other factors.

Table 1: General Nutrient Requirements for Beef Cattle

	TDN % (energy)	CP%	Calcium %	Phosphorous %
Mature Cows				
Mid-gestation	50 - 53	7	0.20	0.20
Late-gestation	58	9	0.28	0.23
Lactation	60 - 65	11 - 12	0.30	0.26
Replacement Heifers	60 - 65	8 - 10	0.30	0.22
Breeding Bulls	48 - 50	7 - 8	0.30	0.22
Yearling Bulls	55 - 60	7 - 8	0.23	0.23

Interpreting Lab Results

Most labs provide basic information on moisture content, protein, energy, fibre and some vitamins and minerals. More specialized tests may include results for nitrates, toxins and other parameters.

Dry Matter (DM): reported as a percentage, this refers to the moisture-free content of the forage sample. The water content of forage will dilute nutrients yet doesn't usually have a great impact on animal intake, therefore it's important to balance all rations on a dry matter basis.

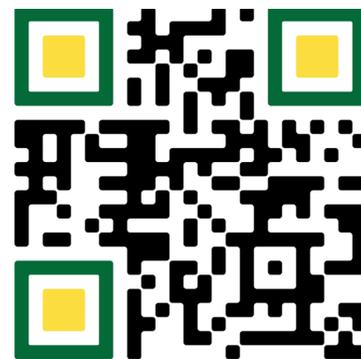
Total Digestible Nutrients (TDN): refers to the feed's energy value. It is reported as a percentage, TDN indicates the energy of the forage and refers to the total amount of digestible fibre, carbohydrates, fat and protein in a sample.

Crude Protein (CP): reported as a percentage, this refers to both the amount of true protein and non-protein nitrogen in the sample.

Neutral Detergent Fibre (NDF): provides the ration's fill and inversely affects intake. It is reported as a percentage, this indicates the amount of structural fibre content in the plant. More mature forages will have higher NDF levels.

Acid Detergent Fibre (ADF): is connected to forage digestibility. It is reported as a percentage, this value measures the least digestible portions of the forage plants, such as cellulose and lignin.

A list of laboratories can be found online. Visit saskatchewan.ca and search 'feed testing' or scan the QR code.



If you have additional questions about feed tests or developing rations, contact your local livestock and feed specialist or the Agriculture Knowledge Centre at 1-866-457-2377.