



Forage Quality Considerations

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Manitoba Forage and Grasslands Association's [Green Gold](#) Program looks at the optimum time to harvest alfalfa for first cut – an important process because the difference between good quality and lower quality alfalfa is timing. Stage of growth at harvest is crucial when you are targeting various groups of cattle for that first cut. When feeding dairy cows in early lactation you may be targeting the early bud stage, but if you are feeding mature beef cows then mid to late flowering may better suit your needs. At first bloom, you only give up about 10% of potential yield. Waiting once it starts to bloom produces more stem and more leaf shatter when baling, producing hay with lower protein and higher fibre levels.

Harvest strategies for grass hay or alfalfa-grass hay are different than those of alfalfa.

For grass hay, the best time to cut is just after the boot stage but before heading if you are looking to optimize quantity and quality. For most of our forage grasses, the first growth of the spring has a seed stem that both adds yield and reduces feeding value faster with advancing maturity.

By the heading stage (which is just after boot stage and before seed-set), you have about 90 to 95 per cent of the potential growth of that plant, with quality still fairly good. Protein levels at heading are normally around 9 to 10 per cent (depending on the type of grass) - exactly what you'd need for a lactating beef cow. If you wait until seed-set stage, you may gain 5% more production, but quality drops from 9 or 10 per cent protein level down to about 6 or 7, which is only adequate for a dry cow.

With cutting at heading, grasses tend to re-grow faster and there could be more regrowth for fall pasture. Once the plant starts to produce seed, it puts all its energy into seed production instead of leaf production, and re-growth will be limited. If you cut it before the heading stage, it will still try to produce more leaf tissue, because it wants to grow and produce seed,

The best time to cut grass for quality is the boot stage, but you give up about 30 per cent of growth. It's better to compromise a little quality to get more tonnage by waiting until just before it heads and still have regrowth.

With grass-alfalfa mixtures it is best to cut based on the maturity of the alfalfa not the grass. When you start to see blooms it is time to cut. You will be giving up some tonnage of the grass portion but you will have a high quality feed that can be used for almost any class of livestock.

Stage of maturity at harvest is the most significant factor in determining the level of energy and protein hay has to offer. Leaf to stem ratios decline as plants mature, which means there are lower protein concentrations and larger amounts of indigestible fiber in the forage.

The best way to ensure optimal levels of energy and protein is to cut hay early. This is easier said than done, though, as cool-season forages grow rapidly in the spring and offer a short window of opportunity to harvest.

Forage quality has direct effects on animal performance and, ultimately, profitability. A common belief is that cows can simply eat more low quality forage to meet their energy demands. This is not true in most cases since the higher fibre content in low-quality forage decreases voluntary feed intake. Forage with low protein content (7 per cent or less), high acid detergent fibre (ADF) and neutral detergent fibre (NDF), cannot meet the nutritional needs of many, if any, classes of livestock without supplementation. Sometimes making hay of this quality cannot be avoided due to weather, but often times it can through proper management. Feeding high quality forage typically means no supplementation is needed other than minerals to meet nutrient requirements for most cattle.