

Stockpile Forages

What is stockpile forage?

Stockpiled forage is the term given to pasture saved for grazing after the growing season. Stockpile forage can be used from October through to early December, or until weather or snow conditions inhibits grazing. Stockpiled forage can also be used early in the spring before new growth pasture is available.



Why use stockpile forage?

On the Canadian prairies, winter feed is the primary cost of production of a typical cow herd. One strategy to reduce feed costs is to lengthen the grazing season since costs on pasture are about 50 percent of those for stored feeds.

Is stockpile forage quality adequate when grazing beyond the typical grazing season?

Three years of forage testing in SW Manitoba shows that stockpiled grass has adequate nutritional quality from October to December for dry, mature cows in early to mid gestation. Stockpiled alfalfa has adequate nutritional quality from October until the end of November. Alfalfa quality is dependent on leaf retention; once alfalfa sheds its leaves, forage quality declines rapidly. The nutritional value of stockpile forage used in March and April is below the requirements of all classes of cattle. Therefore, supplementation is required.

Getting good forage quality

Forage research has consistently shown that the more mature the forage, the poorer the quality. Fully mature forages will be too low in nutritional quality to maintain a dry cow. To ensure adequate quality, the forage must be harvested, that is, grazed or hayed in mid summer and then allowed to regrow for grazing late in the season. This stockpiled regrowth will have a higher nutritional quality than fully mature forage.

What class of livestock should be grazed on stockpile forage?

Stockpiled forage is primarily for mature dry cows in early to mid gestation. Stockpiled forage will rarely meet the nutritional requirements of young growing stock, early lactation cows, or thin cows, particularly as the season progresses and/or under inclement weather conditions.

Total Digestible Nutrients

Total digestible nutrients (TDN) decline over the winter (Figure 1). However, all of the grasses tested retained adequate TDN over the winter and spring for a dry cow in early to mid gestation. Alfalfa's energy levels drop significantly between October and December. By early December alfalfa did not have enough energy to maintain a dry cow. Lactating cows require 60 to 65% TDN to maintain milk production. Some of the forages will have adequate energy to sustain lactation. However, growing stock expected to gain 2 lbs/day need 65 to 70% TDN. Even by mid October most of the forages will be inadequate for young growing stock.

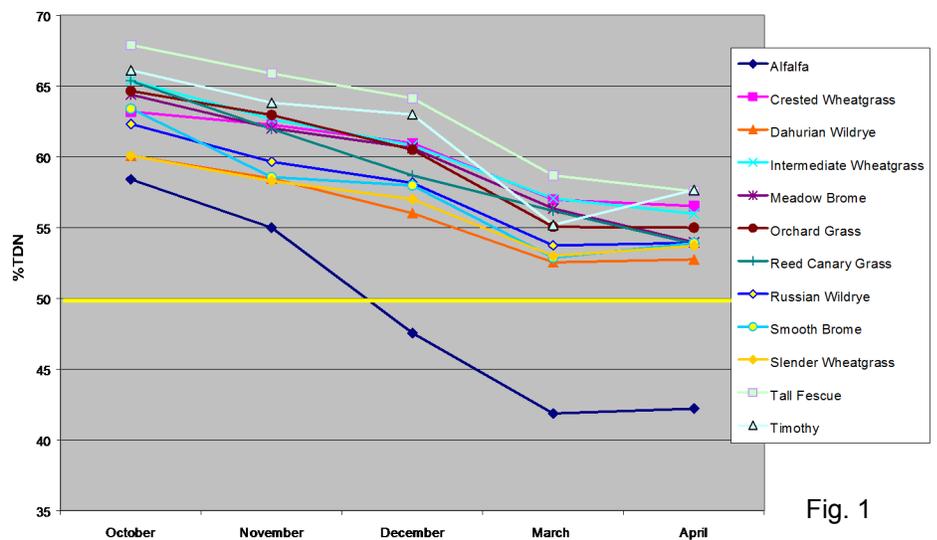


Fig. 1

Crude Protein

A dry cow in early to mid gestation requires 7 to 8% crude protein (CP) for maintenance (Figure 2). Forage regrowth has good levels of protein for dry cows and cows in late lactation. However, young, growing stock and early lactation cows require 11 to 13% CP. By mid October most of the forages have insufficient CP for growing stock and early lactation cows. While the CP of the grasses drops slowly over the winter, alfalfa's protein drops rapidly between October and December due to leaf drop.

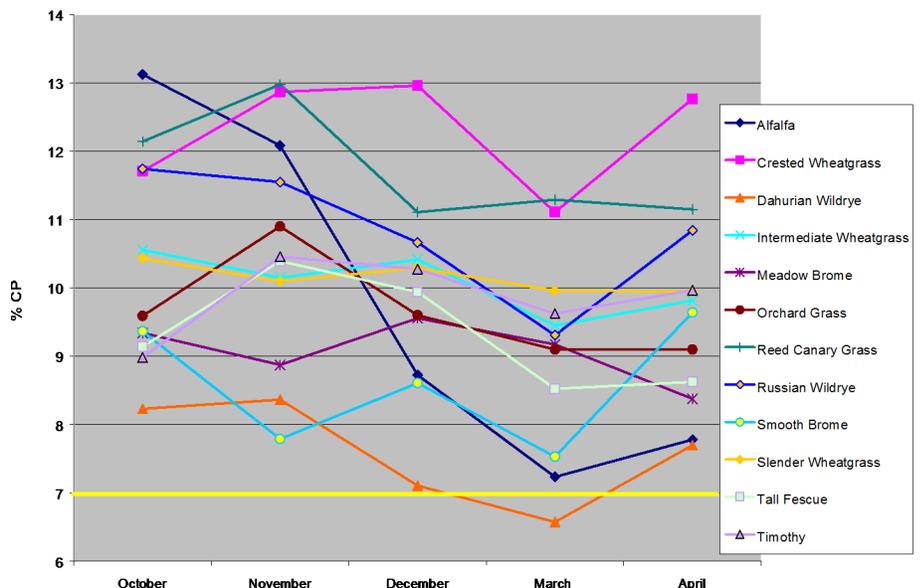


Fig. 2

Relative Feed Value

ry cows in early to mid gestation require a relative feed value (RFV) of 80. Lactating cows require RFV values between 100 to 123, and growing stock require RFV values between 124 to 140. Figure 3 shows that all of the forages are adequate for dry cows until the end of November. Some of the forages are adequate for late lactation cows, but by late October none of the forages are adequate for growing stock.

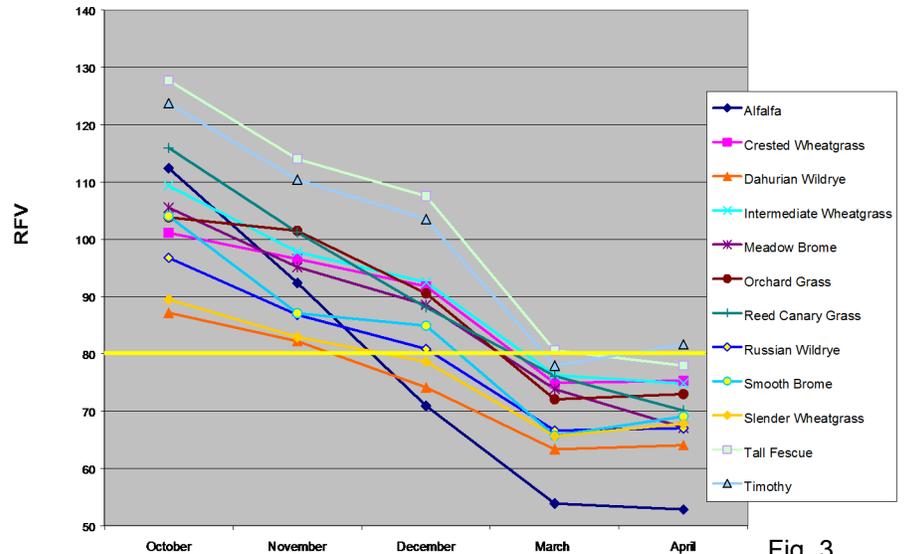


Fig. 3

How much yield is

Your cows will be working harder in the fall for their feed than during the summer since inclement weather and snow can affect intake levels. Therefore, the cows should be presented at least 1 ton of forage per acre.

Harvesting early in the summer will provide more forage for grazing in the fall, but the forage will be poorer quality due to higher maturity. Harvesting late in the summer will provide excellent forage quality, but will provide too little regrowth for efficient grazing. In most areas of Manitoba, harvesting near July 15th will give you the best balance between quality and quantity.

Yield is highly variable between years. Figure 4 shows the average yields over three years of sampling. Some years, the forages yielded below 1 ton/ac and other years they all yielded over 1 ton/ac. The forages known for good regrowth potential, such as meadow brome, orchard grass, alfalfa and tall fescue, consistently gave better regrowth yields than those with poor regrowth potential, such as smooth brome.

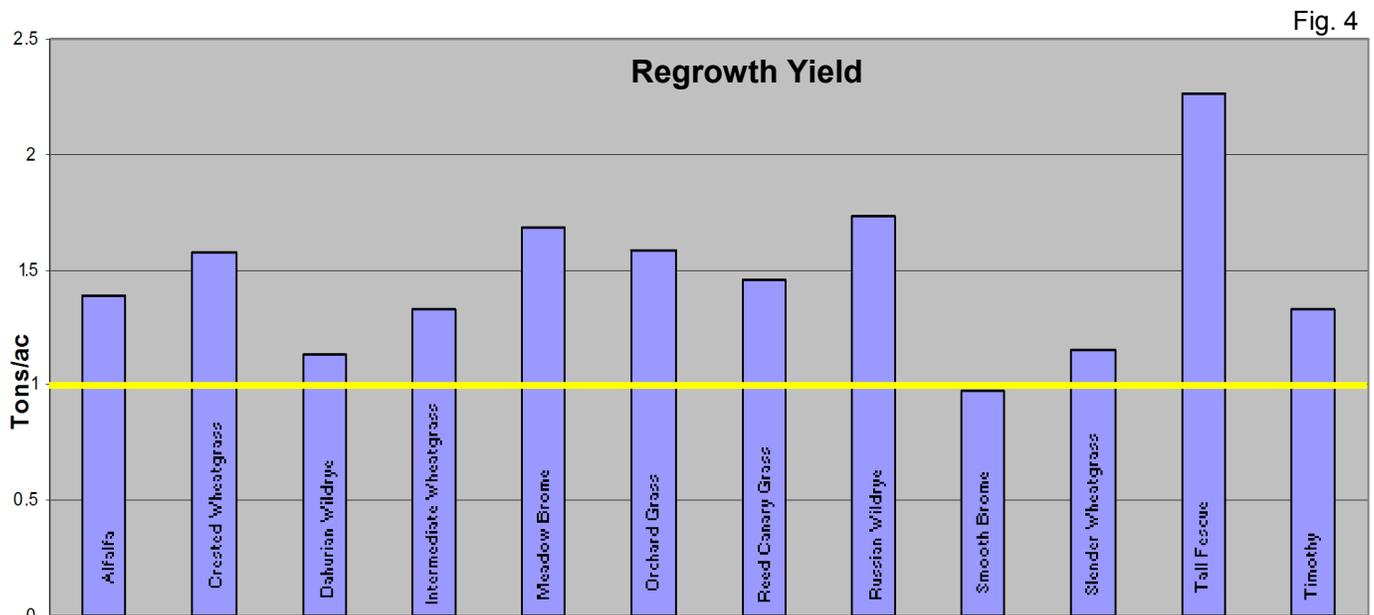


Fig. 4

How much forage should be left behind?

In general, about 1000 lbs/acre should remain after grazing the stockpiled forage. This is about 3 to 4 inches of forage. First, grazing beyond this point will limit daily dry matter intake. Limiting intake will result in declining body condition, regardless of the forage quality. The second reason is to maintain forage health. Litter conserves soil moisture, protects the soil from erosion and increases nutrient cycling. All result in increased or improved stand longevity and vigor.

Forage Structure

Plant structure is important to consider if livestock are expected to graze through some snow cover. Soft grasses like meadow brome and orchard grass tend to lay down under the weight of snow, but forages like tall fescue and Russian wildrye stand up and are more easily found by the livestock. Grazing the soft grasses earlier in the fall will reduce the risk of the forages being buried and lost under snow cover.



Meadow Brome 3250 lbs/ac



Tall Fescue 4050 lbs/ac

Conclusions

Stockpiled forage has adequate nutritional value for dry cows in early to mid gestation. In some years quality will be sufficient for cows in late lactation, but rarely will stockpiled forage be adequate for young growing stock or early lactation cows. Under Manitoba conditions stockpiled forage may extend the grazing season into November and early December most years. Because the quality of the alfalfa declines rapidly between October and December best use of this forage will occur between October and the end of November. The nutritional value of stockpile forage used in March and April is below the requirements of all classes of cattle, therefore, supplementation is required.

Figures presented are averages over three years of sampling. It should be remembered that nutritional quality and yield can vary significantly between years. Feed testing of your own stockpiled forages is recommended.