Stockpiling Forages

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With increased rotational stocking in the Upper Midwest, stockpiling is also finding its way in this region. In order to reduce costs associated with feeding hay, some farmers successfully use stockpiling of grasses in early winter by having cattle stay on stockpiled pastures and minimize consumption of hay. Farmers who stockpile pastures can provide feed to grazing animals into December, and sometimes longer, if ice and snow do not prevent grazing. Wisconsin research shows cattle and sheep can graze into 20" of fresh snow as long as there is a good supply of ungrazed forage below.

Teff grown for stockpiling in northern Wisconsin. Growth is half way (mid-August) to final freeze date.

What is stockpiling?

Stockpiling is forage which is allowed to accumulate for grazing at a later time. In this practice, the goal is to build up as much standing dry matter as possible before the frost date. The result is semi-green forage with nutritive value and non-structural carbohydrates (energy) adequate enough to meet beef cattle nutritional needs into early winter.

What factors affect stockpiling?

Grass stockpiling success is the combination of species selection, nitrogen (N) fertilization, and accumulation (or rest period) intervals. Modalities for the Upper Midwest may include summer annual species or cool-season perennial grasses. The typical rest period for accumulation will start ~60 days prior to freeze date.

Based on research results in a stockpiling study in Wisconsin, an N application by late summer (August 1) of 60 lbs/ac produced nearly a 75% increase in yield. Nevertheless, similar application in early spring had no effect on stockpiling yield.

What species can be stockpiled?

Grasses are preferred for stockpiling. Some farmers stockpile summer grasses such as teff; others stockpile cool-season perennials such as reed canarygrass, orchardgrass, timothy, or tall fescue. Stockpiling research results from the University of Wisconsin in 2000 showed good biomass response for reed canarygrass, orchardgrass, and tall fescue (with yields ~3,000 lbs/ac). They also found smooth bromegrass and quackgrass were the lowest yielding (~1,800 lbs/ac) – thus smooth bromegrass and quackgrass were not recommended for stockpiling.

Likewise, legumes are not recommended for stockpiling due to leaf loss with maturity and freezing – lowering both yield and nutritive value.

What is the quality of stockpiled forage?

Stockpiled forage nutritive value decreases over winter. Research results from Wisconsin, however, have shown quality remained at adequate levels for beef livestock, dry dairy cows, and sheep. Digestibility of stockpiled forages was high over winter with values near 70% for species like orchardgrass, reed canarygrass, timothy, tall fescue, bromegrass, and quackgrass. Similarly, crude protein concentration reports for stockpiled forages of 14% are not unusual; values can be as low as 9% if the forage has been weathered or if the whole herbage with mostly stems is sampled. If using reed canarygrass, keep in mind that its quality tends to decrease rapidly, thus, it should be used early if you want to maximize it.

Stockpiled forages are adequate for beef livestock but should not be fed to lactating dairy cows as the sole source of forage fiber.

When to use stockpiling?

Grazing stockpiled forages is reserved for the time when pastures are no longer productive. Research done in the Upper Midwest (MN and WI) and Canada recommends to graze stockpiled forages early in the winter. Frozen grass tissue will remain relatively intact until rain or snowmelt occurs. Farmers who stockpile pastures can provide feed to grazing animals well into December, and sometimes longer, if ice and snow do not prevent grazing.