



Stockpile Grazing: A Strategy for Extending the Grazing Season

UW-Madison Division of Extension

Stockpile grazing is a technique that can help minimize the high cost of winter feeding. Reducing feed costs by extending the grazing season as late into the year as possible is a goal common to nearly all grazing operations. Using livestock to harvest forage is the most cost-effective method of feeding your animals, and every additional day of grazing has positive implications on farm finances.

Stored feed for winter is the highest cost of a grazing operation, and every day you graze is money saved.

Stockpile grazing is a strategy that works well for farmers across the Upper Midwest, and pairs well with other fall/winter feeding strategies. Stockpile grazing extends the grazing season into fall and early winter by “storing” fresh pasture for grazing after forages go dormant. It involves setting aside a portion of pasture and allowing forages to accumulate for a period of 60-80 days in late summer, then grazing the stockpiled forage during the non-growing season.

Trials at the University of Wisconsin (Wells, 2022) concluded that dairy heifers grazing stockpiled forages could achieve industry standards for growth – with average daily gains of 1.9 – 2.2 lb/day during the stockpile grazing period. Not only is stockpile grazing cost-effective in comparison to feeding harvested forage, but it can be used as a highly effective tool for managing the long-term production and quality of the pasture.



Photo 1: Beef cattle grazing 80-day stockpiled orchardgrass in late-November.

Planning for Stockpiling

Stockpile grazing must be properly planned ahead of time. Since a portion of the pasture area is removed from the rotation for a stockpiling period of 60+ days, this requires additional pasture area to allow for normal rotations to continue while stockpiling. To start, a farm must be stocked appropriately (animal units/acre) to ensure an adequate supply of land and forage for stockpiling. This determination depends on the soil type and yield potential of the land. Well-managed stockpiled pasture can yield 2 tons/acre, or enough to feed 6 animal units/acre for a month. Some farms plan stockpile grazing into their system every year and manage the entire operation accordingly, while other farms make the decision seasonally based on how weather and forage yields play out. Other farms may also use extra hay-crop land or rented pasture as opportunities for stockpile grazing. Either way, planning is a critical part of stockpile grazing.

Pasture species composition is a big factor for successful stockpile grazing. In general, cool season perennials work the best because they maintain forage quality into the dormant season. Grasses have an edge on legumes as they don't wilt and lose leaves after frost nearly as much, and they have minimal bloat potential, but mixed pastures that include legumes can serve the purpose well. While tall fescue is known as a favorable grass for stockpile grazing, species more common to Wisconsin pastures such as orchardgrass and meadow fescue, which are also more palatable and versatile can also be successfully stockpiled.

Tall fescue is widely accepted as the most favorable grass species for stockpile grazing because of its late-season yield potential, upright structure and waxy leaves that preserve forage quality during colder weather. However, it is often avoided for cool season pastures due to low palatability. This issue can be avoided with proper management and variety selection, but most farmers choose different species for grazing. Farmers who choose tall fescue with the purpose of stockpiling should select improved soft-leaf, non-endophyte or novel endophyte varieties.



Photo 2: Summer above-ground water systems can work for stockpile grazing as long as the temperature rises above freezing during the day. Access to a frost-free water source is eventually needed for the end of the stockpile grazing season.

Beyond forage species, there are other considerations that are necessary for stockpile grazing. Farmers must think about how to maintain water availability when weather conditions turn cold, and how they will facilitate access to that water supply from the stockpile grazing site. Fence layout and proper watering infrastructure are important in facilitating water access. The stockpiling process is often set into motion with a late-summer clipping or harvest of the forage, and farmers must time these tasks accordingly. Additionally, depending on the forage species being stockpiled, the pasture may require an application of fertilizer – another task that must be planned ahead of time.

Setting Up Stockpiled Pastures

The most common method of stockpiling selected pastures involves pulling a group of paddocks out of the grazing rotation in August for 60-80 days to allow forage accumulation. As summer grazing is halted, fertilization and any clipping or harvesting must occur quickly to maximize growth and quality. Clipping or harvesting at the start of the stockpile period can help ensure good forage palatability by removing residual stems and seed heads and setting the entire stand back to a vegetative growth stage. Even with 60-80 days of regrowth, cool season grasses will not return to a mature stage that late in the growing season, and will maintain high forage quality.

Fertilization

Under adequate moisture conditions, nitrogen (N) fertilization at the onset of stockpiling will result in increased fall growth and a longer stockpile grazing period but may impact legume persistence. In a mixed grass and legume stand, N fertilization is generally not recommended (UW A2809), but if fall growth is the objective, applications of N fertilizer ranging from 30 – 60 lbs N/acre may be economical to increase stockpiled grass growth. In a grass/legume pasture, rates can be on the lower end of the range. Liquid manure or commercial fertilizer are viable options to provide N fertility.

Studies conducted at the UW-Marshfield Agricultural Research Station found that stockpiled meadow fescue, orchardgrass, and tall fescue all responded positively to early-August applications of 30 or 60 lbs N/acre, with orchardgrass and tall fescue having greater yields than meadow fescue. In this study, 60 days of stockpiling resulted in 1 – 2.5 tons (dry matter)/acre, providing approximately 60-80 days of grazing for 1 beef cow.

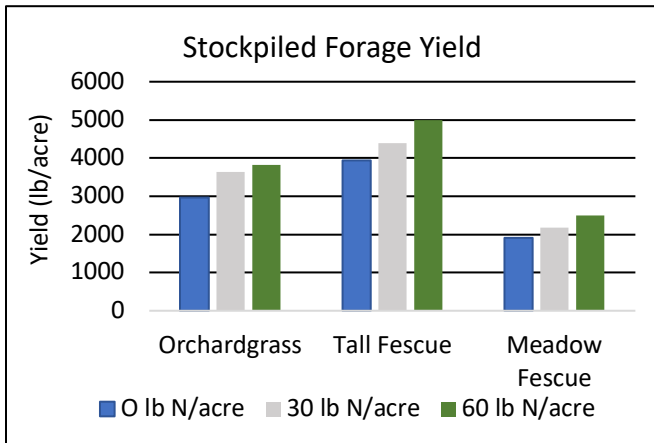


Figure 1: Stockpiled forage yield for pure-grass stands of three species after August fertilization at three different rates.

Managing Stockpiled Pastures

Stockpile grazing should be managed with a strip-grazing method to make efficient use of stockpiled forage (60-70% forage utilization). Proper residual (4") should be maintained to allow the plant to persist through winter with sufficient reserves. This allows highly efficient forage use. While overgrazing may not be as detrimental during the dormant season, it may not be worth the risk and ensuring proper residual will help protect the stand from winter damage.

Initially, daily allocation should be figured based on estimated forage available, animal intake, and grazing efficiency. Forage allocation needs to be adjusted based on residual heights since forage availability may vary across pastures. With good planning, main season pasture will last until cold temperatures halt growth and grazing of stockpiled pasture starts at the beginning of the non-growing season. But initiation of grazing stockpiled pastures

can occur whenever the forage growth of the normal rotation pastures is insufficient to continue grazing. Like in the summer grazing season, frequent moves of cattle are suggested for stockpiled pastures using a strip-grazing approach. This limits the amount of forage waste due to trampling and improves manure nutrient distribution. Unlike in the summer grazing season, a back-fence should not be necessary as regrowth has stopped for the year. Providing adequate fresh forage can help to avoid grazing below the desired residual height. Critical and sensitive areas should also be considered and treated as they would for other overwintering methods.



Photo 3: Dairy heifers stockpile grazing a meadow-fescue/clover mix in early-November.

Example of calculating the daily distance to move per cow:

Forage DM/acre: 3500 lb DM/acre (no residue)
 Animal forage intake: 1,000 lb (BW, body weight) x 3% of BW = 30 lb DM intake/day
 Grazing efficiency: 70% area:
 $30 \text{ lb DM} / 3,500 \text{ lb DM/acre} / 0.70 = 0.012 \text{ ac}$
 Distance to move (350 ft wide pasture):
 $0.012 \text{ ac} \times 43,560 \text{ sq. ft/ac} / 350 \text{ ft} = 1.5 \text{ ft/cow/day}$

Stockpile grazing usually concludes when the supply has been grazed to the target residual height. However, a few instances may stop it early. Stockpiled pasture should not be grazed when soil is saturated and subject to damage from hoof traffic. Cattle can graze through several inches of snow, but a significant amount of snow or ice can halt grazing. Cool season grasses are more susceptible to getting buried by snow and ice than other species – this is where tall fescue has an advantage. Additionally, stockpiled forage of poor quality (significant stem/residue presence) can be rejected by cattle. While uncommon, this is a risk worth being aware of and can be prevented with grazing, clipping, or harvesting before stockpiling.



Photo 4:
Stockpiled
pasture with
natural re-seeding
of red clover.

Stockpile grazing is one of several cost-effective strategies available to Wisconsin farmers for extending the grazing season beyond the growing season.

Stockpile Grazing Tips

- Stockpile grazing must be planned at the beginning of the grazing season
- Pasture area and stocking rates must allow for stockpiling while continuing a normal rotation
- Nitrogen applications (manure or synthetic) prior to stockpiling can be economical, but rates should be based on legume presence
- Harvesting or clipping prior to stockpiling can reset plants to the vegetative stage and ensure more efficient grazing utilization
- Best grazing management practices should be employed to ensure proper residual and to avoid overgrazing and damage to pasture
- Because stockpiling involves allowing forage to grow for 60 days or more, it can help to maintain legumes in the pasture by allowing them to reach maturity and naturally reseed
- Stockpiling plan should include how to protect the pasture from damage during times of significant precipitation by increasing space or removing from pastures for a short time
- All cool season mixed pastures can be used for stockpiling
- Winter rain and snow gradually diminish forage quality, but well-managed stockpiled pastures can extend the grazing season well into winter

Authors

Jason Cavadini, *Grazing Outreach Specialist at UW-Madison Division of Extension*

Matt Akins, *Dairy Scientist at USDA-ARS US Dairy Forage Research Center*

Laura Paine, *Outreach Coordinator, Grassland 2.0*

Contributors

Adam Abel, *Grazing Specialist, USDA – Natural Resources Conservation Service*

Derrick Raspor, *Resource Conservationist, USDA – Natural Resources Conservation Service*

Paul Daigle, *Former County Conservationist*

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