

CHAPTER 8 ~ EXTENDING THE GRAZING SEASON

INTRODUCTION

On conventional beef and sheep farms in Atlantic Canada, overwintering accounts for 60-80% of the cost of production. The cost of putting up stored forage is a major component of that cost. Through extending the grazing season producers can provide livestock with a more economical but equally nutritious feed in the months before and after the traditional grazing season. Extending the grazing season also reduces the costs associated with housing animals such as handling of bedding and manure. To be successful, producers must focus their efforts on providing suitable, well drained pastures that can be grazed late into the fall and even winter (Duynisveld, 2008).

MANAGING FOR EXTENDED SEASON GRAZING

Stockpiling

Stockpiling pasture is a management system that allows for grazing late in the fall after the pastures have ceased growing for the year. To stockpile a pasture, the pasture is allowed to grow from July or early August with no further defoliation until after the first killing frost. The stockpiled areas are grazed after the other pastures have run out of available forage.

Depending on the amount of pasture stockpiled, livestock can graze these areas as long as weather conditions allow. It is important to plan ahead to ensure a forage sward height of 20 to 30 cm is available at the first killing frost. This grazing management system works best if the stockpiled forage is not allowed to become overmature, as selective rejection will occur due to poor plant palatability. The idea is to have the frost stop plant development while it is in the growth phase so the best quality is preserved by the cold (Duynisveld, 2008).

Strip grazing or block grazing are excellent ways to increase the utilization of the stockpiled forage. Controlled grazing reduces the selectivity of the animals, forcing them to eat what is available.

Good fertility and adequate fall moisture are both important to successful pasture stockpiling. If nitrogen (N) is limiting, an application of 50 kg/ha of N to the stockpiled pasture in late August will help increase forage yield.

Snow can certainly be a challenge to the grazier, but despite this there are opportunities to pasture in the winter months. Hardy species such as fescues have been shown to maintain quality through the cold and freeze-thaw cycles of Atlantic Canadian winters. Cattle are able to successfully graze through up to 15 cm of loosely packed snow while sheep can paw through nearly 30 cm.

When the snow is too deep or packed too hard for animals to graze through, feed can be made available in other ways. One easy method is by bale grazing which allows the animals to graze from bales of hay placed in the field. This reduces labour by eliminating the need to move feed

and bedding in and manure out of the barn. It also adds nutrients to the pasture for spring plant growth. The nutrients returned to the soil from bale grazing are particularly effective when bales are spaced as to provide an even distribution of manure. Another alternative for winter feeding is the use of crops that are tall enough to poke up through the snow (Duynisveld, 2008).

In 1998, Wand, Buchanan-Smith and Hamilton studied the feasibility of using stockpiled perennial pastures for dry, pregnant beef cows grazing in late fall and early winter. They divided 40 dry cows into four pasture groups with two groups on grass pasture and two groups on a legume/grass pasture. There were also 10 cows (in barn) fed round bale hay as a control group. Grazing was allowed from October 3 to December 18. All pasture was strip grazed with the polywire fencing moved daily. There was no back fence. The results showed the grazing cows and barn fed cows had similar weight gains and increases in backfat up to three weeks before the trial ended. Then, the grazing cows lost weight, possibly due to the snow accumulation reducing their feed intake. There were no statistical differences between the grazing and indoor cows for pregnancy weight, calf weight and calving ease.

The economics of alternative management practices for beef-cow enterprises was studied by Gao, Stonehouse, Weersink, Buchanan-Smith and Hamilton in 2001. They compared the economics of traditional winter calving versus summer calving, and confinement feeding versus extending the grazing season. They found the revenue was similar between each comparison, but in both situations the alternative management practice had a lower cost which resulted in higher net return. The most profitable combination of management practices was summer calving combined with extending the fall grazing season and then retaining the feeders up to the finishing stage.

Controlled Grazing

Controlled grazing techniques extend the grazing season by increasing plant productivity over the season. Controlled grazing methods such as “put and take”, rotational grazing of paddocks, and strip grazing keep pastures more productive throughout the season. By keeping pastures healthy they grow better and last longer.

Early Weaning

Early weaning will allow cows to improve their body condition prior to winter. An improved body condition in the early fall may allow a longer winter grazing period with less supplemental feed. Cows in good body condition will have a reduced daily nutrient requirement making it easier to match forage quantity and quality, leaving more forage available for other cows (Lardner 2003).

Best Species for Stockpiling and Fall Grazing

Grass species recommended for fall stockpiling include frost tolerant species such as tall and meadow fescues, orchardgrass and annual ryegrass. Tall fescue is remarkably well adapted for stockpiling because of its uniform distribution of growth over the season. It continues to grow well into late summer and fall and its stiff, waxy leaves seem to hold up well over the winter. A study on stockpiling summer tall fescue pasture for late summer and fall grazing showed early stockpiling improved forage yields by 0.5 – 1 tonne/ha. A nitrogen application in late summer improved the yield and the crude protein content of the fescue (Buchanan-Smith et al. 2008).

To be utilized most effectively, orchardgrass must be uniformly grazed to no lower than eight cm (three inches) at a high animal stocking rate for a short grazing period (three days). Leaving a eight cm stubble height and a short grazing period will reduce the chance of winter kill or injury.

Table 8.1 lists the productivity of various perennial pasture species throughout the growing season.

Table 8.1 Productivity of various perennial pasture species throughout the growing season

Early Spring		Late Spring	
Meadow Bromegrass	Red Fescue	Meadow Bromegrass	Perennial Ryegrass
Orchardgrass	White Clover	Orchardgrass	Red Fescue
Kentucky Bluegrass		Kentucky Bluegrass	White Clover
		Reed Canarygrass	
Early Summer		Mid-Late Summer	
Meadow Bromegrass	Reed Canarygrass	Meadow Bromegrass	Alfalfa
Orchardgrass	Perennial	Orchardgrass	Red Clover
Ryegrass		Meadow/Tall fescue	Birdsfoot Trefoil
Timothy	White/Red Clover	Reed Canarygrass	
Meadow/Tall fescue	Birdsfoot Trefoil		
Early Fall		Late Fall	
Kentucky Bluegrass	Reed Canarygrass	Kentucky Bluegrass	Reed Canarygrass
Tall fescue	Red Clover	Tall/Meadow fescue	Red Clover

Alternative Fall Crops

Fall crops can also be used to extend the grazing season (Table 8.2). Annual ryegrass seeded in early spring produces large amounts of high quality forage into the fall, so it may be an option. It can produce feed within six to eight weeks of planting and will remain productive well into late October. It can be seeded with a billion or no-till seeder, but requires adequate fertility for high yields.

Brassicas, such as kale, rape and stubble turnip, are another option for late summer to early winter grazing. They tolerate frost and also grow well into October. Choosing which type of brassica to use depends on several factors, such as time of seeding, desired time of grazing and the class of livestock. Kale is seeded earliest (late May to early July) and can be used between October and early January. Rape and stubble turnips should be seeded between mid June and late July and are ready for use by late August or early September through November. Yields range from five to 10 t/ha for kale, and three to eight t/ha for rape and stubble turnips. Grazing management is the key to the successful use of brassicas. Strip grazing has been shown to be an effective method of getting good utilization of these crops by reducing wastage. A note of caution: brassicas are very high in protein and energy but low in fibre and they also can reduce the uptake of iodine when consumed in excessive amounts. These problems can be avoided by limiting the intake to less than half of the diet. Cows in the third trimester should be given an iodine supplement (caution there is some anecdotal concern that grazing brassicas in the third trimester

might lead to increased abortions in cows). Consumption is about one kg/head/day of dry matter (DM) for lambs and 4.5 kg DM/head/day for cattle allowing for about 20% wastage (Thomas and Goit 1986).

Cereals like fall rye and oats can also be used to extend the grazing season until snow limits grazing. Seed fall rye by mid-August for mid October grazing. If seeded early, fall rye can be cut for haylage and then grazed in the fall. With its early spring growth, fall rye is a useful early pasture. Oats can be seeded any time during spring or summer and is ready for grazing 6-8 weeks after seeding. Oats can be used as a companion crop when establishing a forage stand. Provided the ground is not too soft oats are ready for early summer grazing at 20 cm tall. The oats can be grazed to a height of 5 cm. To reduce competition with the establishing crop the seeding rate of the oats is lowered to 30 to 40 kg/ha.

Table 8.2 Potential annual crops to be used to extend the grazing season

Crop	Planting Date	Seeding Rate (kg/ha)	Row Spacing (cm)	Seeding Depth (cm)	Fertility (kg/ha)	Grazing Time
Annual Ryegrass	late April-mid May	25 for diploid; 35 for tetraploid	broadcast or no-till; good place to incorporate manure	1	at planting, 17-17-17 at 300; after each grazing, 34-0-0 at 125	6-8 weeks after planting, grazed every 30 to 45 days thereafter
Kale	late May-early July	drilled: 2-4; broadcast: 4-6	15-70	1.5	Nitrogen 80-120 P ₂ O ₅ 65 K ₂ O 65	120 days
Rape	mid June-late July	drilled: 2-4; broadcast: 5-7	15-30	1.5	Nitrogen 80-100 P ₂ O ₅ 65 K ₂ O 65	90-100 days
Stubble turnips	mid June-late July	drilled: 2-4; broadcast: 3-6	15-30	1.5	Nitrogen 100 P ₂ O ₅ 135 K ₂ O 135	80-90 days
Fall oats	mid August	80-100	15-18	2	at planting, 17-17-17 at 350	45-60 days
Fall rye	mid August	150	15-18	2	at planting, 17-17-17 at 350	45-60 days
Grazing corn	late May to mid June	30,000 seeds/acre	35-75	5	incorporate 40 t/ha manure, then in planter: 25-25-0 at 200	mid October onward