Grass-Fed Beef Initiative Extension Series

Fact Sheet 3 of 11

Managing Pasture for Quality: The Key to Raising and Finishing Cattle on Pasture

Managing pastures to provide an abundance of high quality forage is essential to the success of raising and finishing beef on grass.

Proper grazing management, maintaining healthy soils and the utilization of high quality forage species are factors that need consideration when managing pastures for productivity and quality.

Controlled Grazing

The most important factor influencing pasture productivity and quality is controlled grazing. A well-managed rotational grazing system allows plants to recover between grazings and supplies animals with highly digestible leafy forage, while encouraging the growth and persistence of high quality grasses and legumes. Legumes are a key component of high quality pasture as they generally have more crude protein, are higher in by-pass protein, are lower in fiber, and favour higher intake.

Good grazing management controls the frequency, intensity, timing and duration of grazing, helping plants stay healthy and productive

Especially during the finishing period, legumes should make up 30 - 35% of the pasture, balanced with high quality grasses such as meadow fescue and Kentucky bluegrass.

Recent research has shown that more complex mixtures are higher yielding, have greater yield stability over the grazing season, and are less weedy than simple mixtures. Mixtures should be based on species compatibility and purpose.

A mixture of 40% meadow fescue, 20% Kentucky bluegrass, 20% timothy, 10% white clover, and 10% Birdsfoot trefoil makes a good general purpose mix that does well in early spring through to late summer when moisture is not limiting.

Tall fescue mixed with Kentucky bluegrass, timothy, birdfoot trefoil and a grazing type alfalfa has proven to be ideal for stockpiling pasture for fall finishing cattle. Naturalization of sown pastures is inevitable but can be delayed if well adapted compatible species are used, proper soil fertility is maintained and proper grazing management is practised.

Increasing and maintaining the legume content in pastures can be a challenge. It starts with healthy soils: soils high in organic matter, good internal drainage and with pH readings of 6.0 – 7.0. Legumes require good amounts of phosphorous (P), potassium (K), calcium (Ca), magnesium (Mg) and sulphur (S) to be productive.

Ca	Mg	P_2O_5	K_2O	S
5000 kg/ha	500 kg/ha	300 kg/ha	350 kg/ha	>35 kg/ha

Table 1: Optimum soil test levels for Ca, Mg, P & K

A soil test followed by recommended applications of these essential elements will help the legumes to establish and persist. A small amount of nitrogen fertilizer in the spring (25 kg of N per hectare [22 lb of N per acre]) can encourage legume growth. Too much nitrogen will reduce N fixation and increase the competiveness of grasses and weeds.

High Quality Forage

Legume content in existing pastures can be increased through over-sowing or sod seeding. Over-seeding pastures by broadcasting red clover seed onto the surface of the sward is the least expensive method of increasing the legume content of an existing pasture.

An over-seeding study (Papadopoulos et al. **(1)**)showed that although introducing red clover plants into an established sod by over-seeding can be slow and somewhat unpredictable, their contribution to the total sward biomass can be increased from less than 5 % to - 44% (average 27% over three sites) in the first year after seeding.

Over-seeding pastures with red clover at 5-8 kg/ha is best done in early spring when moisture is not limiting and on more open swards where the seed has a chance of falling on bare soil

White clover is high in quality and well adapted to grazing, making it a preferred pasture species. Other legumes can also perform well when good grazing management is practised.

Recent advances in alfalfa breeding have developed alfalfa cultivars with broad deep set crowns, creeping stems and creeping roots, which make the plant more tolerant to grazing

A recent pasture mixture study with sites in Nova Scotia, Quebec, Ontario and Manitoba clearly demonstrated a trend of superior daily live weight gains with mixtures containing birdsfoot trefoil and meadow fescue (Papadopoulos et al. **(2)**). The study also showed that complex mixtures with alfalfa, orchard grass and tall fescue seem to perform better under droughty conditions.

It takes the very best forage to grow and finish cattle. Managing pastures to help provide an abundance of high quality forage throughout the growing season is critical to growing grass-fed beef successfully.

For more information

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Bibliography:

*(1)*Papadopoulos et al. Low-input technique to reintroduce red clover into naturalized pasture stands is a slow process. Can. J. Soil Sci. (In Review). 2014.

(2) Papadopoulos et al. Performance of forage mixtures under a grazing management system in northern latitude. Final report. Beef Science Cluster 2009-2013, Beef Cattle Research Council. 2013.

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