

Feature Article

BUDGETING FEED REQUIREMENTS FOR BEEF CATTLE ON PASTURE

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This is a guideline to determine EITHER:

- The number of cattle of different sizes that can be stocked on a given area of pasture
- OR
- The number of acres required to adequately carry a given number of cattle during the grazing season.

PLEASE NOTE: Experience and wisdom will modify these guidelines and justifiably so. They are intended as a starting point to focus a plan for good rotational grazing management and that is all.

Some Definitions:

- Cycle or rotation length: Number of days taken by cattle to complete a rotation of grazing a pasture acreage. (Distinct from regrowth period because it is regrowth period **plus** time in one paddock of the rotation).
- Forage availability: Weight of forage dry matter available to cattle when they first enter a paddock in the rotation.
- Forage requirement: Weight of forage dry matter expected to be eaten by a given type and weight of beef animal.
- Stocking rate or carrying capacity: Number of animals that can be carried on a given acreage of land completing a cycle under rotational grazing management.
- Sward height: Height of the forage - usually taken at the point where leaf density becomes insignificant and ignores reproductive stems on grasses.

Some important principles:

Rotational grazing management is done to provide:

- Sufficient good quality forage in front of cattle at all times
- Restoration of grass and legume (vegetation and roots)
- Time consumption of grass and legume to start when restoration is complete but growth rate of plants and plant quality has not started to decline significantly
- Consume sufficient forage to prevent plant decay and permit cattle to maintain intake
- Optimum time in one paddock is 4 to 7 days for beef cattle

CYCLE OR ROTATION LENGTH - In SW and Central Ontario, cycle lengths average 30 days **but** because plant growth is much more rapid before seeding of grasses in the spring and early summer than it is later on, cycle length should start out at 15 to 25 days and end up at 30 to 40 days in August and September. At a 30 day average, we should be able to accommodate 5 cycles, i.e. 150 days in the grazing season.

SWARD HEIGHT - It is most important to have a consistent height for exit of cattle from a pasture. Seven to 9 cm should be left at exit. Entry height is more variable and becomes shorter as the season progresses (forage stands become shorter and denser post grass heading). It is usual for paddocks to be entered at 20 to 30 cm.

CALCULATION OF STOCKING RATES OR GRAZING ACREAGES

1. Estimate animal consumption (per day) - Suckler cows (with calves) and growing steers or replacement heifers should consume approximately 2.5% of body weight as forage dry matter.
e.g. 800 kg cow-calf pair (600 kg cow, 200 kg calf) = $800 \times .025 = 20$ kg per day

2. Estimate forage availability - Suggested methods to use:

- Eye judgement
- Sward height
- Conductivity meter
- Estimate from hay yield

Note: Estimates are per cycle. Forage availability ranges from 200 to 1000 kg/cycle. The following table will indicate how to estimate from hay yield:

Hay yield (tonnes/ha):	2.5	5.0	7.5	10
Forage availability (kg/ha/cycle)	500	1000	1500	2000

3. Calculate stocking rates (animals/ha) or grazing land required:

- Should be estimated from **longest** cycle in season as this will set the maximum number of animals that can be carried for the full season. This cycle is 40 days long.
- Forage availability per day per cycle (FADC) = Forage availability/40
- Stocking rate = FADC/Estimated animal consumption
- Land requirement/animal = Estimated animal consumption/FADC

EXAMPLE:

800 kg cow-calf pair, hay yield estimate at 2.5 tonnes/ha, what is the stocking rate or land requirement per animal?

FADC = Forage availability/40 = 500/40 = 12.5

Stocking rate = FADC/Estimated animal consumption = 12.5/20 = .625 cow-calf pairs/ha

Land requirement per animal = Estimated animal consumption/FADC = 20/12.5 = 1.6 ha/cow-calf pair.