SUMMARY SHEET

Grazing Your Dairy Herd

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Following our two webinars on “Grazing Your Dairy Herd,” here is some useful information to keep in mind as you reflect on and plan your grazing project.

Building a Well-Managed Pasture Grazing System

Components to Consider:

- **Paddock size** - Don’t leave animals more than 4-5 days in a paddock without back fences. Staying too long leads to overgrazing and sets plants back.
- **Strip allocations** - Aim to give fresh forage every 12 hours—or sooner. Cows learn quickly that fresh grass comes after milking, which helps with the cow flow back to the barn.
- **Forage selection** - Selecting the best forages for your system is key to building a system that works for your farm. Pick species that fit your soil, climate, and grazing goals.
- **Water access** - Keep water close and easy to move. The farther cows have to walk, the less efficiently they’ll graze.
- **Windbreaks & shade** - Run windbreaks east-west if possible to capitalize on available shade and protect animals from the weather.
- **Access lanes** - If possible, have a dry and clean access road to decrease damage to pastures and improve animal welfare and health.
- **Fencing** - Make sure you have a well-grounded electric fence system with adequate voltage to manage cattle location.
- **Training** - It will take time for both the farmer and the animals to learn this system. Start close to the barn, with smaller paddocks and shorter grazing periods.

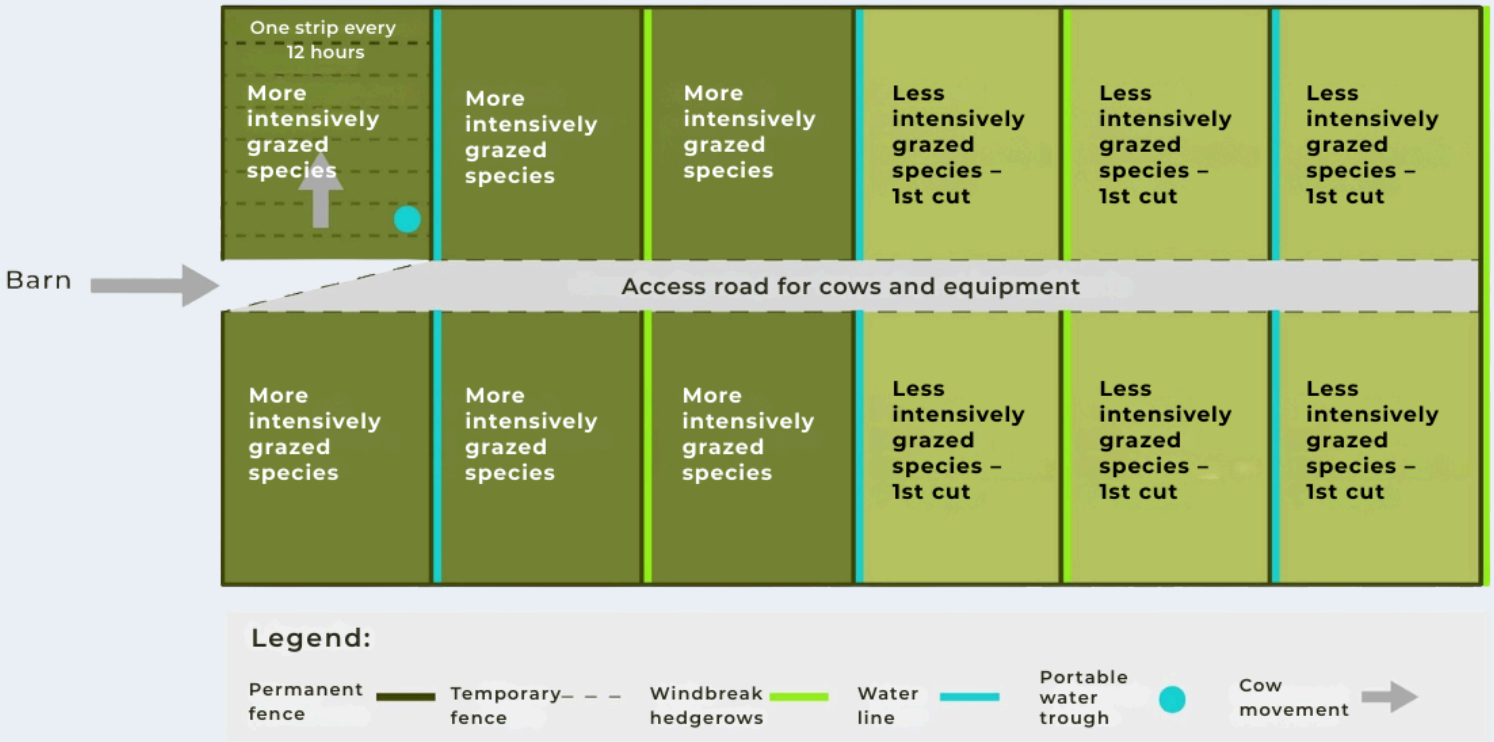
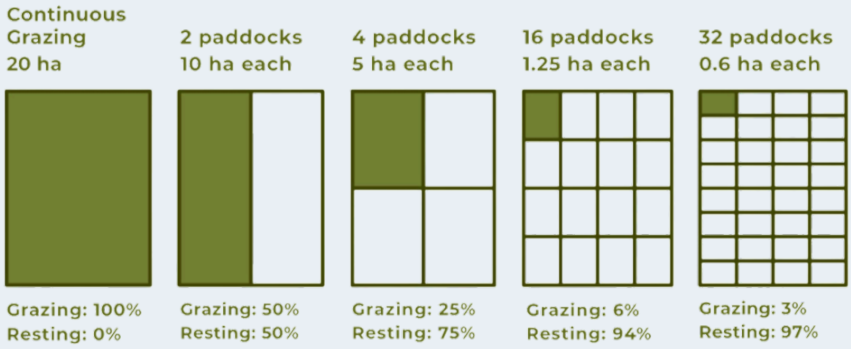


Illustration provided by: Lactanet and translated by Regeneration Canada



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Relationship of Rest Periods and Yield

Comparing a continuous grazing system to a 16-paddock system, **dry matter yield can increase when you increase the number of paddocks** from 2,893kg/ha to 6,595 kg/ha.

This is due to the pasture rest period, which increases as the number of paddocks in the grazing system increases. See the illustration to the left.

Forage Selection

Forage selection is a **key factor in a well-managed grazing system**.

Select forages that:

- Grow well **in your conditions**
- Provide high **nutritional value**
- Have **high palatability**
- Have **good regrowth capacity**
- Handle **grazing and trampling** pressure

Table 5. Plant Species Adapted to Intensive Pasture Management

	Alfalfa	Ladino white clover	Red clover	Birdsfoot trefoil	Timothy	Smooth bromegrass	Meadow bromegrass	Orchardgrass	Meadow fescue	Reed canarygrass	Tall fescue
Summer regrowth	✓	✓	✓	✓	x	✓	✓	✓	✓	✓	✓
Tolerance to grazing	x	✓	x	✓	x	x	✓	✓	✓	x	✓
Tolerance to trampling	x	✓	x	✓	x	x	✓	✓	✓	✓	✓
Palatability	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x

Source: Turcotte (2021).

1. The low palatability of tall fescue has been observed in older cultivars of this plant. However, it is likely that the new cultivars known as 'soft leaf' will be more palatable. Experience and research in the coming years will shed light on this issue.

Illustration provided by: Lactanet and translated by Regeneration Canada

You may also want to consider having **different species in paddocks that are closer to the barn vs farther away and treating those paddocks differently.**

Plant Adaptation to Grazing Intensification

Illustration provided by: Lactanet and translated by Regeneration Canada.

Grass Growth Curve and Grazing Entry and Exit Heights

- Entry and exit heights differ based on your method of measuring grass, as the Pasture Plate Meter captures density as well as height.
- **Begin spring grazing at a lower height** to handle rapid growth and make the move from winter feed smoother.
- **Removing the cows while there is still forage left** will improve grazing quality and plant regrowth capacity.
- **Rest periods shift** with plant type, soil, and weather.

See the diagram below:

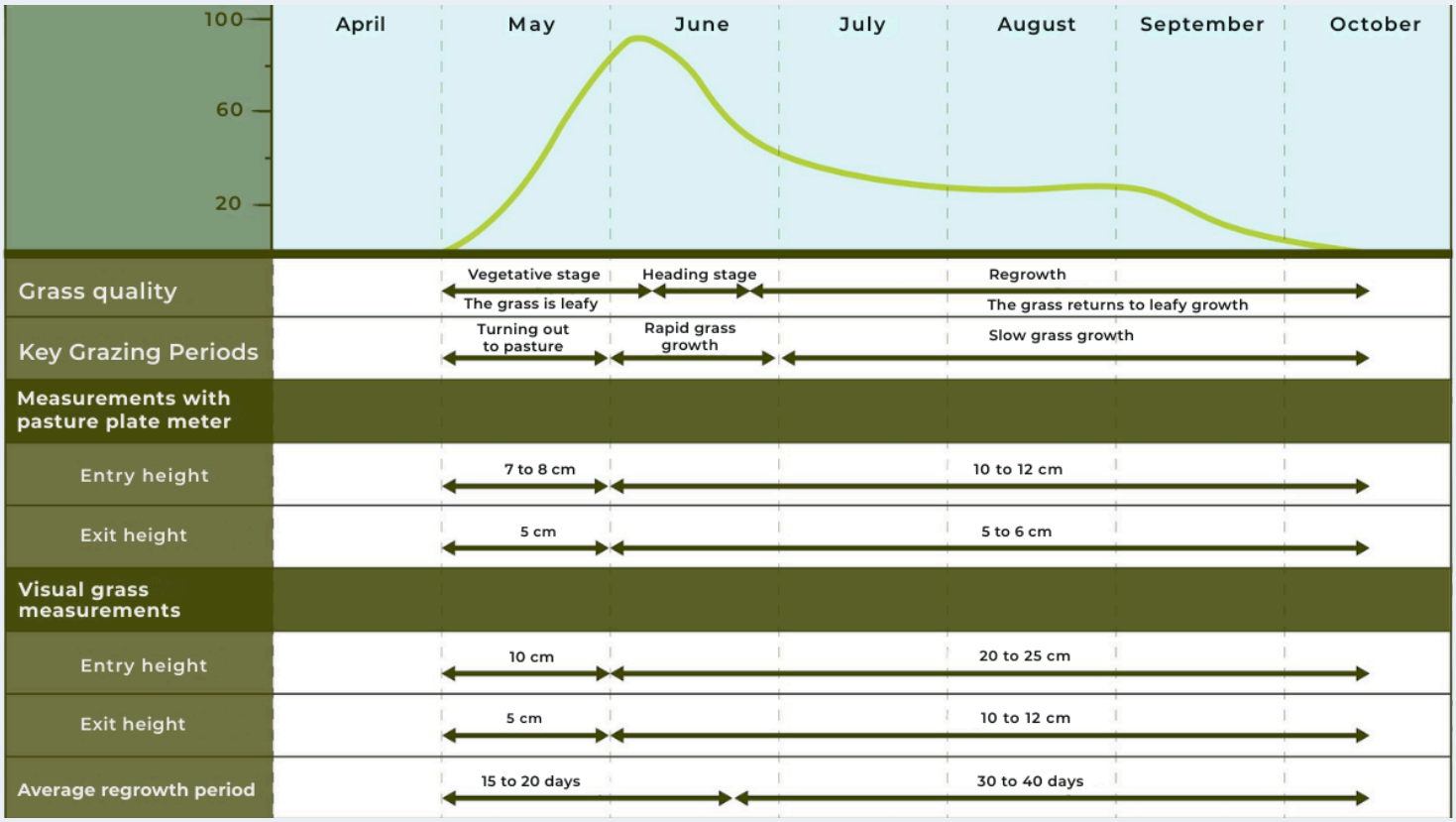

Illustration provided by: Lactanet and translated by Regeneration Canada.

- The grass growth curve will **peak in forage production** and then decrease over the summer months.
- Complementarities among forage mixes with different growth curves can be maximized to maintain **grazing efficiency and profitability throughout** your grazing timeline.

Comparison of Cow Performance Across Feeding Systems

The table below compares what's possible in a **well-managed pasture system** versus a **barn-based system** across key performance factors.

This shows that **part-time grazing systems can deliver similar results compared to animals staying in the barn.**

	Part-time grazing	No access to pasture
Concentrate intake (kg/cow/day)	9.5	11.5
Total dry matter intake (kg/cow/day)	20.9	21.4
Milk production (kg/cow/day)	31.5	31.1
Milk fat content (%)	3.77	3.76
Milk protein content (%)	3.08	3.04
Milk fat content + protein yield (kg/cow/day)	2.01	2.06
Average body condition	2.88	2.94

Source: Arnott, Ferris et O'Connell, 2015.

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Best Practices for Grazing in a Robotic Milking System

- **Cows are milked before going out to pasture.** Set up sorting as close as possible to the pasture exit to keep cow flow smooth.
  - Two possible systems that can be used: **Sorting gates or sorting by the robot.**
- **Give the cows fresh grass regularly.**
- **Pasture close to the barn.**
- **Build good laneways.** Alleyways should be dry, easy to walk on, and allow visibility to the cows.
- **Make water easy to access.** Provide water close to fresh grass in the pasture, while also keeping access available in the barn.

Important Factors for Improving Milk Composition and Yield on Pasture

- **Genetics**
  - Select genetics that are adapted to the system you want while having high milk quality and production.

- **Dry matter intake (DMI)**
  - Depends on time grazed, bite rate, and bite size.
  - Due to the high moisture content of pasture and increased time to ingest plant materials, DMI is decreased while on pasture.
  - Having a good abundance of quality grass can increase the amount per bite that animals are getting, which can help to increase intake on pasture.

- **Heat stress**
  - Heat can quickly impact intake, milk production, and grazing behaviour.
  - Ways to minimize heat stress include:
    - Building shade areas like shelterbelts
    - Allowing animals to graze during cooler parts of the day (early morning and late at night)
    - Having good quality water in close proximity

Tools for Pasture Management

- The **Pasture Plate Meter** - Measures grass height and density
- **HappyGrass Grazing** - a digital grazing calendar
- **HappyGrass Paddocks** - a digital grazing plan
- **PROFILab** - milk fatty acid profile testing

These tools can also work together. The pasture plate meter can give pasture growth information for HappyGrass to display on the grazing calendar and further build the digital grazing plan.

PROFILab is available in Quebec and the East Coast and pairs milk testing for fatty acid profiles with the HappyGrass App to give reliable, real-time information on how your grazing is impacting milk composition.

Photo provided by: Lactanet

Knowledge from Farmers Successfully Grazing their Milking Herd

Ways to Maintain High-Quality Pasture Throughout the Grazing Season

- Manage for **adequate rest periods** and optimum forage quality.
- **Harvest (haying/silaging) the first cut** of pastures if you can't graze before they become too mature.
- **Clip pastures with a mower when needed** - typically at 7 inches in height.
- **Applying liquid manure** (with Johnson-Su compost) can support soil life and pasture growth.
- **Work with what you've got.** If you can't get into the pasture when you want, give access to a larger area, let cows pick what they want, then mow the rest to reset.

Photo provided by: Clanman Jerseys Ltd.

Cover Crops

- **Use cover crops to give pastures a break.** Diverse cover crop mixes can rest perennial fields while still providing high-quality feed and supporting milk production.
- **Graze at the right stage.** For cereal mixes, aim to graze at the **boot stage** to get the best balance of quality and regrowth.

Photo provided by: Sunflo Dairy

Managing Your Time

Set yourself up for efficiency

Investing in the right equipment—and keeping it in good shape—can make fencing quicker and **reduce daily labour** during the grazing season.

Mark key infrastructure in the field

Marking water spigots (for example, with bird nesting boxes or visible markers) makes them easier to find and adds a bit of habitat diversity at the same time.

Full-Season Pasture Rest

Allowing full-season rest for a small amount of your acres (30% maximum) **creates a higher fungal soil, which encourages legume growth**.

Direct seed legumes in the spring before the full-season rest.

What farmers are seeing: more ground cover and increased legume presence.

Often grazed with dry cows in the fall, once plants are fully mature.

Other Tips and Tricks from Farmers' Grazing Experience

- Using **milk tubing to cover rebar corner posts** on their electric fence system.
- Have a **strong perimeter fence** system and use polywire for interior fences.
- **Match the cow to your system.** Cows that are well-suited to grazing will perform better—genetics matter.
- **Use grazing beyond the pasture.** Options like early/late season cover crops, swath grazing, and bale grazing can help extend the grazing season.
- **Adjust the feed in the barn.** Some farmers reduce TMR by up to 60% during grazing season, as cows meet more of their intake on pasture while still maintaining strong robot visits (around 2.3 milkings/day).

Photo provided by: Sunflo Dairy

All the images and figures provided by Lactanet can be found in the technical guide: "*Producing Milk on Pasture*," produced by Lactanet and the CRAAQ.

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