

Bale Grazing



Bale Grazing Beef Cows

Bale grazing during Manitoba's long winters can save producers **time, effort, and money** while improving nutrient distribution and reducing environmental risk when managed properly.

What is Bale Grazing?

- Involves **placing feed bales in the field in fall** and controlling access with electric fencing.
- Cows are moved to new bales in **2–5 day rotations**.
- Provide **at least two days of feed per move** to ensure equal access.
- Longer rotations increase **feed waste**.

Key Benefits

- **Self-feeding:** Animals feed themselves, reducing daily chores.
- **Lower equipment use:** Tractor work is concentrated in fall, reducing wear and tear.
- **Reduced operating costs:** Less fuel and maintenance.
- **Manure management savings:**
 - Less manure in corrals = lower haul-out costs.
 - Reduced greenhouse gas emissions from manure piles and diesel use.
- **Improved land fertility:**
 - Nutrients spread across the field, boosting future forage production.
 - Residual feed conserves soil moisture.
- **Less infrastructure wear:** Corral fencing lasts longer.
- **Time efficiency:** Chore time is significantly reduced.

Bale Grazing Nutrient Management

Bale grazing imports large amounts of nutrients to a field through feed, while exporting very little through animal weight gain. This can improve soil fertility but often creates **localized nutrient “hot spots”** near bale sites, posing environmental risks. Proper management ensures benefits without negative impacts.

Key Management Practices

- **Careful site selection** to minimize runoff and leaching risks. Seeded perennial forage stands are preferred over native prairie or annual fields.
- **Reasonable bale density** to avoid excessive nutrient concentration.
- **Strategic placement** of fencing, shelters, and waterers to control livestock movement.
- **Portable windbreaks** where natural shelter is lacking.
- **Regular cattle rotation** for uniform manure distribution.
- **Field rotation** to allow recovery and draw down nutrient levels.
- **Annual soil testing** to monitor nutrient status.

Site Selection Guidelines

- Avoid:
 - **Coarse soils** (risk of leaching to groundwater).
 - **Sloping or compacted soils** (risk of runoff).
 - **Areas with high water tables.**
- Sample soil separately in high-traffic areas and analyze:
 - **Nitrate-N and phosphorus** (0–6 in depth).
 - **Nitrate-N** (6–24 in depth).

Environmental Compliance

- Follow **Livestock Manure and Mortalities Management Regulation**:
 - Prevent manure runoff into surface or groundwater.
 - Keep cattle off stream banks; provide alternative water sources.
- Use **winterized pumping systems** for dugouts/sloughs to reduce contamination risk.
- Avoid riparian areas; if used, **limit access with fencing**.

Wildlife Considerations

- High big-game populations may damage bales.
- Options:
 - Limit bale grazing to **early winter**.
 - Choose less-traveled areas.
- Note: **Wildlife Damage Compensation Regulation** does not cover bale grazing losses.

Getting Started with Bale Grazing

Calculating Feed Requirements

To determine land area and number of bales needed:

Formula:

of cows × cow weight × DM intake/day × feeding period (days) = DM needed

DM needed ÷ feed DM % = feed needed (as-fed)

Feed needed (as-fed) ÷ bale weight = bales required

Key Points:

- Dry matter intake = **2.5–3% of body weight** per day.
 - Include **up to 20% extra** for feed waste.
 - Example:
 - 200 cows × 1,400 lb × 0.027 × 92 days = **695,520 lb DM**
 - ÷ 0.85 DM = **818,259 lb as-fed**
 - ÷ 1,200 lb/bale = **682 bales**
 - 20% waste = **136 bales total**
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Locating and Managing Your Bale Grazing Site for Sustainability

Setting the Bales

- **Twine considerations:**
 - Place bales with **sisal twine on their sides** (twine will rot).
 - Place bales with **plastic twine on their ends** so twine can be removed before feeding.
- **Shelter:** Provide natural shelter (trees) or use **portable windbreaks**.
- **Fencing tips:**
 - Use an **extra lead wire** or **double wire system** (hot wire on top, grounded wire below) to prevent animals from accessing the next set of bales.
 - Snow insulates and reduces electric current—use a **high-output energizer** and wire instead of string or tape.
- **Posts:** Use **fiberglass rods or rebar speared into bales** as an alternative to drilling posts.
- **Spacing:** Place bales on a **40 ft grid**, leaving **30–35 ft between bales** for uniform manure distribution.

- **Wire placement:** Position wires between rows for easier movement during feeding.
- **Environmental protection:**
 - Keep bale grazing areas **at least 328 ft (100 m)** from surface watercourses, sinkholes, springs, or wells.
 - Avoid locations that allow **surface runoff into watercourses**.

Nutritional Considerations for Bale Grazing

- **Deliver a balanced ration** to meet all animals' nutrient requirements.
- **Avoid mixing feed qualities** within a two-day move; poor-quality feed alone can weaken cows.
- When using mixed feed qualities:
 - Provide **good feed for two days**, then poor feed for two days (e.g., if feeding $\frac{2}{3}$ hay and $\frac{1}{3}$ green feed, rotate every four days).
- **Separate thin cows** from the main rotation and feed them individually.
- Use **body condition scoring** to monitor performance.
- In **cold weather**, shorten rotation by one day to increase feed availability.
- Ensure access to **clean water**:
 - Provide a reliable water source or clean, soft snow daily.
 - If cows are not licking snow, supply an alternative water source.
- Provide **salt, minerals, and vitamins** in the field.
- Watch for cows needing **energy or protein supplements** (especially thin cows and heifers).
- **Feed test regularly** to confirm nutritional requirements are met.

Table 1 Nutritional requirements of the breeding herd ¹				
Class	Total Digestible Nutrients % (TDN)	Crude Protein % (CP)	Calcium% (Ca)	Phosphorus % (P)
Mature cows				
Mid gestation	50-53	7	0.20	0.20
Late gestation	58	9	0.28	0.23
Lactating	60-65	11-12	0.30	0.26

¹ Nutritional requirements vary with body weight, frame size, predicted average daily gain (ADG) and stage of production.