#10 May 2024

Cow-Calf Yardage

Winter feeding costs are a major expense for cow-calf producers across Canada. This leads to questions about the least cost way of winter feeding, including the least cost delivery method. The concept of yardage, defined as the cost of delivering winter feed, is frequently discussed but not as often reported in benchmarks. Multiple factors influence yardage including economies of scale, feedstuff, delivery location/method and operational management.

The Canadian Cow-Calf Cost of Production Network (COP Network) shows feeding only hay is associated with the highest yardage cost, while an annuals/silage mix has the lowest yardage cost. There are substantial reductions in yardage costs for field winter feeding practices such as swath or bale grazing.

Assumptions

The COP Network model allocates overhead costs according to revenue source (generic allocation) and are presented on a per cow basis. For the cow/calf overhead costs (see box) to reflect only winter feeding, three different scenarios were examined:

- The first assumes **50% of overhead costs** for the cow-calf enterprise are allocated to winter feeding. This sets a benchmark, albeit an unrealistic one because labour and machinery are as not extensively used during summer compared to winter.
- The second scenario uses the **proportion of winter feed days** to dictates how much of the overhead costs are assigned to winter feeding. For an operation that has 170 winter feed days, this comes to 47%, and for an operation with 210 winter feed days this comes

Overhead Costs for Cow-Calf Enterprise

- Paid and unpaid labour
- Machinery (including depreciation)
- Fuel, energy, etc.
- Buildings
- Insurance, taxes
- Building and machinery maintenance
- Bedding*
- Utilities
- Other inputs**

* 100% of bedding costs are included for all scenarios.
** This includes advisor costs, legal fees, and other services **except veterinary services**.

to 58%. Overall, these values are fairly close to the 50% cost allocation, meaning it shares the same unrealistic expectation (see Table 1).

- The third scenario assumes that **66% of overhead costs** for the cow-calf enterprise are allocated to winter feeding activity, similar to the Manitoba government's 0.623 multiplier added to labour and machine costs for their yardage equation.

The choice of which overhead costs to include in yardage is informed by Kaliel 2004; Manitoba Agricultural Service Corporation n.d.; Schoepp 2021; and Walker 2020. Similar yardage assessments may include veterinary services, such as the Manitoba Beef Cow Overwinter Cost Calculator, and may not include unpaid labour costs or other fees. Before making a one-to-one comparison, it is important to know which costs are included.

Additionally, it is important to be aware of the differences in yardage costs for feedlots versus cow-calf operations. While the cost sources are similar, the structure of the operations is very different, and feedlot yardage costs tend to be lower because of the larger capacity and variable feeding days.

Yardage estimates using the COP network are broken down by province, herd size, and winter feed length in Table 1, and shown in Figures 2, 3, and 4. Figure 1 shows yardage costs associated with feedstuffs and feed location. These groups demonstrate where major differences in yardage costs can be found.

Herd Size and Economies of Scale

Economies of scale are easily observable with lower yardage associated with larger herd sizes (shown in Table 1 and Figure 2). This likely explains provincial differences as well, where the largest herds are found on the prairies (Alberta and Manitoba[1]), and the smallest in BC and the Maritimes.

Previous studies have found that economies of scale are present for cow-calf operations using different cost estimates such as average total cost or technical efficiency (Darku, Malla & Tran 2016; Langemeier, McGrann & Parker n.d.; Samarajeewa et al. 2012). One often cited advantage of larger farms is that buildings and machinery costs can be spread over a larger herd. Increasing herd size without adding additional infrastructure or tractors obviously lowers the yardage cost.

Winter Feed Time

Less than 177 winter feed days results in the highest yardage cost, except where yardage is determined by the number of winter feed days. With more than 177 winter feed days there is no obvious trend in yardage costs. One reason yardage costs are higher than expected in Saskatchewan is the shorter average winter feed period. The smaller this denominator is, the higher the daily yardage cost.

[1] Benchmark farms in Manitoba are larger than the average in the province with a skewed sample.

Small sample sizes lead to some results being heavily skewed by outliers. For example, high yardage costs in Saskatchewan are primarily driven by short winter feed days and exceptionally high labour costs on four farms.

Table 1: **Estimated yardage costs by province, herd size, and winter feed days**

	50% of OH cost	Proportion of winter feed days	66% of OH cost
Canada (total)	$2.24	$2.31	$2.94
BC	$2.82	$2.86	$3.71
AB	$1.49	$1.73	$1.97
SK	$2.40	$2.08	$3.16
MB	$1.07	$1.08	$1.39
ON	$2.64	$2.77	$3.44
QC	$2.50	$2.88	$3.23
MT	$3.16	$3.51	$4.14
< 78 cows	$3.01	$3.25	$3.93
78 - 150 cows	$2.71	$2.79	$3.57
151 - 246 cows	$1.84	$1.92	$2.41
> 246 cows	$1.45	$1.30	$1.91
< 177 winter feed days	$2.72	$2.20	$3.58
177 - 195 winter feed days	$1.84	$1.86	$2.42
196 - 213 winter feed days	$2.34	$2.59	$3.05
> 213 winter feed days	$1.98	$2.46	$2.60

By Feedstuff and Location

Feeding only hay is associated with the highest yardage cost ($3.62/cow; figure 1), while an annuals/silage mix has the lowest yardage cost ($1.32/cow; Figure 1). There are no significant regional trends or farm characteristics unique to any feed type. However, these results do tie in with the next groupings because annuals are more likely to be fed out on the field.

The group “Only Drylot Feed” in Figure 1 contains producers who do not feed out on the field at any time during the winter ($3.36/cow). The “Supplemental Feed” group feeds for 20-60 winter days on field. All but one of them feed hay as the supplemental feed and the rest of the winter feed is delivered at the drylot ($3.11/cow). The yardage cost is only slightly lower because the majority of feed is still delivered in the drylot, and supplemental feed is also often delivered. The “Field Feed” group feeds for 14-180 days on field through swath or bale grazing ($2.21/cow). Yardage costs are lowest because feed is often left on the field, so there is less time and fuel spent moving feedstuffs around. For bale and swath grazing during the winter, the only cost for each day is the cost of moving fences.

Taken together, these estimates shows substantial reductions in yardage costs for field winter feeding practices such as swath or bale grazing, but only minor benefits for feeding hay on pasture.

Figure 1: Yardage Cost by Feedstuffs and Winter Feed Location

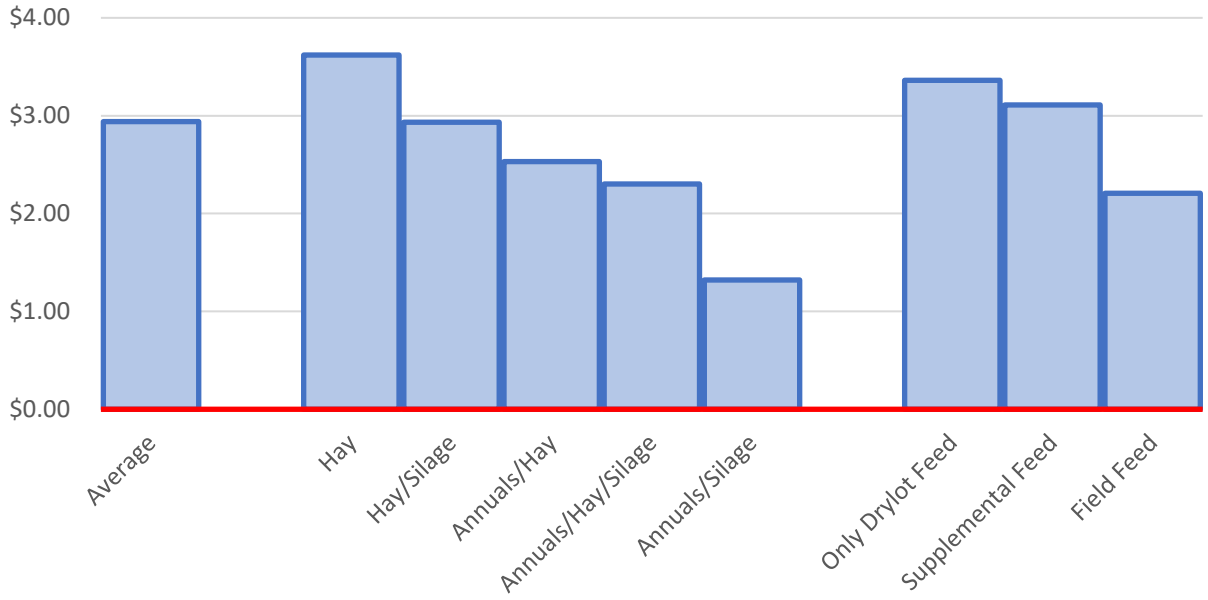


Figure 2: Yardage Cost by Number of Cows

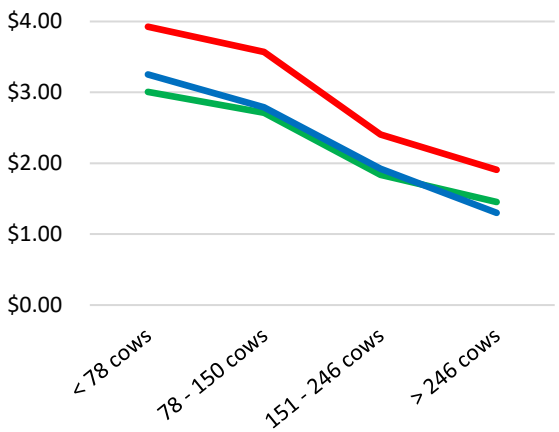


Figure 3: Yardage Cost by Winter Feed Days

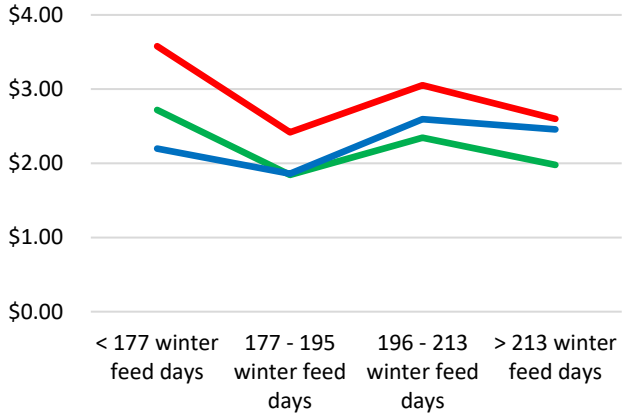
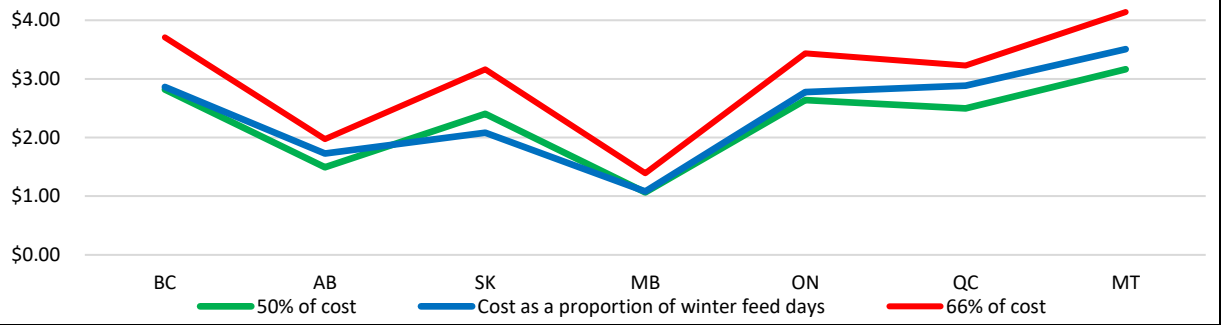


Figure 4: Yardage Cost by Province



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