

Winter Hay Plan for Cattle

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1. The rule of thumb

A cow eats about **2.5% of her body weight in dry matter a day**. Divide by the hay's dry matter (about **88%** if untested; dry hay runs 85–90%) to get pounds of hay as fed, then add your storage and feeding losses. A planning estimate, not a ration: it assumes hay is the whole diet, and lactating cows, cold weather and better hay raise intake. Test your hay and ask your county Extension agent. **Example:** 1,200 lb cow × 2.5% = 30 lb dry matter ÷ 0.88 = 34 lb hay as fed × 1.20 (20% waste) = **41 lb a day**.

2. Hay per cow (88% DM hay, 20% waste)

Cow weight	Dry matter/day	Hay as fed/day (88% DM)	With 20% waste	90 days	120 days	150 days
1,000 lb	25 lb	28 lb	34 lb	3,068 lb (1.5 t)	4,091 lb (2.0 t)	5,114 lb (2.6 t)
1,200 lb	30 lb	34 lb	41 lb	3,682 lb (1.8 t)	4,909 lb (2.5 t)	6,136 lb (3.1 t)
1,400 lb	35 lb	40 lb	48 lb	4,295 lb (2.1 t)	5,727 lb (2.9 t)	7,159 lb (3.6 t)

3. Round bales per cow (1,200 lb cow)

Days on hay	800 lb bales	1,000 lb bales	1,200 lb bales	1,400 lb bales
90 days	4.6	3.7	3.1	2.6
120 days	6.1	4.9	4.1	3.5
150 days	7.7	6.1	5.1	4.4
180 days	9.2	7.4	6.1	5.3

Weigh a few of your own bales. A "1,000 lb" bale that really weighs 800 lb leaves you 20% short. Illinois Extension's shortcut: a 1,300 lb cow eating free choice uses about one big round bale a month.

4. Storage losses (round bales)

Storage (dry matter lost)	Used within 9 mo.	12–18 mo.
On the ground, uncovered	5–20%	15–50%
Elevated (pallets/rock), uncovered	3–15%	12–35%
Covered (tarp), on the ground	5–10%	10–15%
Covered and elevated	2–4%	5–10%
Under a roof (open sides)	2–5%	3–10%
Enclosed barn	under 2%	2–5%

5. Feeding losses

How it's fed	Hay wasted
Cone feeder	3.5%
Ring feeder	6.1%
Trailer / wagon feeder	11.4%
Cradle feeder	14.6%
Unrolled on the ground, several days at once	up to 45%

Feeder figures are dry matter waste measured at Michigan State (cows on concrete). Unrolled figure is from NDSU, when cattle get several days of hay at once.

Run your own numbers free: theranchstack.com/hay-calculator · **Get the weekly ranch tool picks:** one short email a week, free, at theranchstack.com

Sources (links at theranchstack.com/winter-hay-plan):

- NDSU Extension: Take stock of your forage supply before winter feeding begins (www.ndsu.edu)
- Oklahoma State University Extension BAE-1716: Round Bale Hay Storage (extension.okstate.edu)
- Michigan State University Extension (Buskirk et al., 2003): Hay Feeder Design Can Spare Nutrients (www.canr.msu.edu)
- Illinois Extension: Budgeting feed needs for the winter (extension.illinois.edu)

Winter Hay Worksheet

Season: _____ Ranch / place: _____ Feeding starts: _____ ends: _____

A. Hay needed

Group	Head	Avg wt (lb)	Lb/head/day $\text{wt} \times 0.025 \div 0.88 \times 1.2$	Days on hay	Total lb $\text{head} \times \text{lb/day} \times \text{days}$
Total					

B. Hay on hand

Lot / where stored	Bales	Avg bale wt (lb)	Total lb	Minus storage loss %	Usable lb
Total usable					

C. Short or long?

Needed (A) – usable on hand (B) = _____ lb	$\div 2,000 =$ _____ tons to buy
$\div$ bale weight = _____ bales to buy	$\times \$$ _____ /ton = \$ _____ budget

D. Feeding log

Date	Pasture / lot	Bales fed	Supplement	Notes (weather, body condition)

Lb/head/day uses 2.5% of body weight, 88% dry matter hay and 20% waste. Change 1.2 to 1.1 if you store inside and feed in a cone or ring, or 1.35 if bales sit outside uncovered or you unroll several days at once. From theranchstack.com: free hay, stocking-rate and feed-cost calculators.