

Calculating winter feed requirements

Types of feed:

Hay: dry feed, usually about 10-15% moisture

Baleage/haylage: wetter than dry hay, 35-60% moisture, usually less expensive than dry hay

Need to know weight of the bales (small square, large square, large round) feeding out

Animal needs:

2-4% BW depending on stage of production

Considerations when making calculations

- When calculating, better to overestimate to account for loss or wastage (varies but 15% reasonable if you have a good feed-out method. If performing bale grazing in winter, this number could be as high as 60%)
 - Need to determine (and potentially overestimate) length of winter-feeding period (days)
 - Throughout the winter-feeding period, have to keep an eye on animal body condition scores (BCS) to ensure animals are not losing weight and that they're maintaining condition. Also, be aware of how much feed is leftover at the end of each day, are they running out before the day is over? Is there way more feed being leftover than you expected? Be ready to be flexible.
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How to make your calculations:

1. Estimate weight of your animals, desired %BW fed, number of animals. This will give you your weight of DM needed everyday to feed your herd/flock. **Round to the nearest whole number at the end of Step 1 calculation.**
 2. Will you be feeding dry hay or baleage? They contain different amounts of moisture, and thus, you need to account for this when determining how much will be fed to your animals. This called on the 'as fed' basis
 - a. Multiply the number you calculated in step 1 by the % moisture of your desired feed (ex: if you're feeding 12% moisture hay, you would multiply your lbs DM needed per day from step 1 by 0.12) and **add** this number to your lbs DM needed and this gives you your 'as fed' weight. Remember, if you're feeding baleage, you would multiply it by the higher moisture content percentage.
 - b. **Round to the nearest whole number at the end of your 'as fed' weight**
 3. We need to assume that there will be some wastage. Take the number you got for step 2 and multiply it by 15% wastage (or whatever % wastage is assumed due to feed out method) and add that to your step 2 number. This is now your true 'as fed with waste' need. **Round UP to the nearest whole number at the end of your 'as fed with waste' weight**
 4. Determine how many days you'll be feeding your animals over the winter period (or whenever you need to do supplemental feeding). Multiply this number of days by your number determined in step 3.
 5. In order to make things more real-life, you need to know how many tons of feed or bales of feed you will need to either make or buy to get your animals through the winter. Determine the weight of the bales you've made or are buying and divide your winter feed need (number in step 4) by that weight to find out how many bales you need to make or buy to feed your herd/flock. **Round UP to the nearest bale**
 6. How much is this going to cost you? Does it make more sense for you to feed dry hay or baleage?
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Example:

50 steers (1,100 lb each); want to feed 3%BW; winter feeding period 175 days; dry hay 15% moisture large round bales that are 500 lb each at \$75. Assume 25% waste in this scenario.

- 1) $1,100\text{lb} \times 0.03 \times 50 \text{ animals} = 1,650\text{lb DM/d/herd}$
- 2) $1,650\text{lbDM/d} \times 0.15 \text{ water} = 247.5\text{lb water}$ $1,650 \text{ lbDM} + 247.5\text{lb water} = 1,897.5 \rightarrow 1,898\text{lb 'as fed' /day}$
- 3) $1,898\text{lb 'as fed' /d} \times 0.25 \text{ (wastage)} = 474.5 \text{ lb} \rightarrow 475\text{lb/d waste} + 1,898\text{lb/d as fed} = 2,373\text{lb 'as fed' /day (with waste)}$
- 4) $175 \text{ day winter} \times 2,373 \text{ lb/day} = 415,275\text{lb for the winter needed}$
- 5) $415,275\text{lb /season} / 500\text{lb bales} = 830.6 \rightarrow 831 \text{ bales}$
- 6) $831 \text{ bales} \times \$75 = \$62,325 \text{ for winter feed}$