K-STATE Research and Extension | Wildcat District

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How much hay do you need?

Regardless of whether it's a drought year or a year like 2025 when hay producers face delays in starting their harvest, making a few calculations is essential for determining hay needs. It's crucial to know how much hay your livestock operation will require for the non-grazing season in order to purchase or produce enough quality feed to sustain your animals.

To get started, know your livestock inventory: mature females (dry and lactating), growing females, feeder stock, herd sires, etc. Now, know the average weight of each of these livestock classes, and the target weight at the end of the hay feeding season. Next, you'll estimate the forage intake as a percentage of body weight of each class of animal and add everything together.

Let's say a producer has 80 mature dry cows, weighing 1100 lbs, that will assume a 2.5% forage intake for 120 days. Cow needs: 80 cows x 1100 lbs x .025 intake x 120 days = 264,000 lbs or 132 tons needed for the season. This producer also has 50 head of sheep weighing 160 lbs, with a 3% forage intake. Sheep needs: 50 sheep x 160 lbs x .03 intake x 120 days = 28,800 lbs or 14.4 tons. A total of 146.4 tons of hay is needed to provide for this operation.

Now that you have a good estimation of how much hay is needed, it's time to pencil out the hay purchase. You need to know bale count and weight, and the dry matter (think of this as the concentration, 100 – moisture%). Bales are weighed "as-is," meaning that moisture isn't factored in. Another, often overlooked, factor is waste. Bale storage waste can vary from a mere 3% when stored inside on rock flooring, up to 35% stored outside, uncovered, directly on the ground. Feeding waste can also vary greatly; 2-5% with a cone round bale feeder to well over 25% when unrolling bales on the ground. Failing to value the storage and feeding loss will result in overestimating tonnage.

For example, a producer has the following forage inventory: 600 bales x 1,700 lb per bale as-is = 1,020,000 lb as-is of baled forage, divided by 2,000 lb per ton = 510 tons as-is of baled forage available. A forage test revealed the dry matter to be 85%. Assuming a conservative 15% for hay waste, the final tonnage available for feeding was adjusted to 434 tons as-is (510 tons x 0.85).

Winter feeding costs are arguably the most significant expense in a livestock operation, and are often realized at one time, rather than spread out over a few months. Overestimating hay needs

means too much expense, while underestimating can lead to a supply shortage at a time when the purchase price is even higher. K-State has developed a handy tool for producers to input livestock inventory and weights into a calculator and have an estimated hay need, by ton, generated. You can find it at www.agmanager.info/hay-inventory-calculator.

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