

WHAT DOES A ROUND BALE WEIGH?

September 2012 Southern Farmer - Southeast Cattle Advisor Article

Dennis Hancock, Forage Extension Specialist

The University of Georgia

If you asked most folks what their round bales weighed, they'd probably tell you 1000 lbs. Why? Because that's what the guy that sold them the baler said. Afterall, the salesman would lie, would he?

I've always found it strange that we insist (rightly) on an accurate weight of our cattle, our feed deliveries, and even our fertilizer loads, but most folks don't seem all that concerned about their bales' weight. When buying or selling bales of hay or baleage, one should know the tonnage or weight of the lot being purchased. Buying by the bale (i.e., \$ per bale) can lead to paying an amount that is too high or too low for the value of the hay.

In addition, one should never take the seller's word about the weight of the bales as true, unless provided with a scale receipt or other verification of the weight. Often, producers think they know how much the bales weigh, but it is very rare that anyone will actually know the weight of their bales. The only way to truly know the weight of a bale or lot of hay is to weigh it.

Of course, it is rare that the seller will have a scale of sufficient size to weigh the bales. In fact, many sellers will be offended if the buyer doesn't take the sellers' word for it and insists on weighing the bales prior to the purchase.



Buying hay by weight rather than by the bale is the only fair way, but it can make the transaction harder.

As a result, the only choice may be to estimate the average weight of the bales. Table 1 lists common bale sizes (width and height) and a calculated estimate of the lbs of dry matter (DM) in bales of that size at different bale densities (i.e., lbs of DM per ft³). Of course, bale density is very difficult to estimate. Most modern round balers will make a bale that is between 9 and 12 lbs of DM per ft³. If the bales are very loose and spongy when pressed, it is likely that those bales have a bale density of 9 lbs DM per ft³ or less. If the bale deforms only slightly when pressed or spiked, it is likely to be approximately 10 lbs DM per ft³. If the bale is rigid but deforms when pressed hard or spiked, it is likely to be approximately 11 lbs DM per ft³. If the bale is very rigid and only deforms under the tractor's weight, it is likely to be approximately 12 lbs DM per ft³.

Please note that the values listed in Table 1 are merely estimates of bale weight.

Individual results may vary. In fact, many folks tend to overestimate bale density. Therefore, one should assume the bale's weight is approximately 10% less than indicated in the table.

Also note that these values are provided on a DM basis. To calculate the actual "as-fed" or wet weight, divide the weight listed in the table by 100 minus the % moisture in the bale. For example, if the hay is at a stable 15% moisture and the table estimate is 1080 lbs of DM, then the actual "as-fed" or wet weight is 1270 lbs (i.e., 1270 lbs wet weight = 1080 lbs DM/(100-15)).

Table 1. Estimated dry weight or dry matter (DM) of bales of the most common bale dimensions at different bale densities.*

Bale Size		Bale Weight			
		---- Density, (lbs per ft³) ----			
Width	Height	9	10	11	12
<i>(ft)</i>		<i>(lbs of DM/bale)</i>			
4.0	4.0	450	500	550	600
4.0	4.5	570	640	700	760
4.0	5.0	710	790	860	940
5.0	4.0	570	630	690	750
5.0	4.5	720	800	870	950
5.0	5.0	880	980	1080	1180
5.0	5.5	1070	1190	1310	1430
5.0	6.0	1270	1410	1560	1700

* Overestimating bale density is a common mistake. So, one should assume the bale's weight is ~10% less than indicated in the table.

Of course, knowing how much hay one is actually purchasing is only the first step to coming up with a fair price. Knowing what hay is selling for and how much nutritive value that a hay lot will provide is the key to settling on the right price. To learn more about the current market value of hay and to get other suggestions about buying and selling hay, visit the Southeast Cattle Advisor website (www.secattleadvisor.com).