

Beef Briefs

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82% dry matter, 59% TDN, 11% crude protein, priced at \$70 per ton.

• Grass hay: 3rd cut, 82% dry matter, 38% TDN, 10% crude protein, priced at \$50 per ton.

The purpose of dry forages like these is normally to supply energy, so we are most interested in the TDN values. Differences in protein value are minimal, and dry

matter contents are the same, so the easiest way to compare dollar value is by dividing the TDN values of one hay by the other (in this example, $38/59 = 0.644$) and then dividing the price of the second hay by this number ($\$50.00/0.644 = \77.63). This is the equivalent per-ton value of the two hays, so the grass legume hay, at \$70.00/ton, is the cheaper feed.

Alternatively, the value of the grass hay relative to the other calculates out at only \$45.08 ($\$70 \times .644$)/ton. If the dry matter contents of the hays under comparison differ, we must determine the value per unit of TDN. If the grass-legume mixture was 82% dry matter, and the grass 88% dry matter (and all other things as before), the value per unit of TDN for each of the hays is calculated by first calculating the pounds of dry matter in a ton (multiply 2,000 by dry matter percentage), and then taking this figure times each hay's TDN percentage. This gives the total pounds TDN in the load and the price per unit is the price per ton divided by this factor.

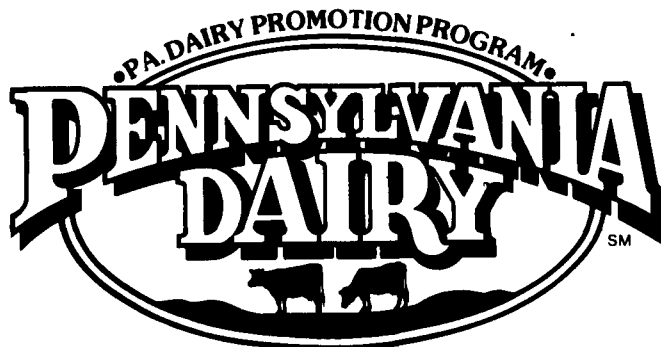
The grass-legume mixture above contains 1,640 lbs DM ($2,000 \times .82 = 1,640$) and 967.6 lbs TDN ($1,640 \times .59$). The per-pound price is $\$0.072$ ($\$70/967.6 = \0.072). Similar calculations for the grass hay show the TDN price to be $\$0.074$ ($2,000 \times .88 \times .38 = 668.8$; $\$50.00/668.8 = \0.074). This method can be used to compare any two feeds, whether for TDN, crude protein, or mineral content, as long as the nutrient of interest and the drymatter contents are known.

These methods are useful in comparing two feeds for a particular nutrient. It should be remembered, however, that a feedstuff contains a unique combination of many nutrients. Least-cost computer ration formulations are available through feed dealers, extension agents, and home software programs. They will help to "fine-tune" the ration and account for all of the nutrients in the feed and their ability to meet a particular set of animal requirements.

Table 1. Nutrient composition of hard and soft wheat

	Hard Wheat	Soft Wheat
Crude protein %	13.5	10.8
Crude fiber %	3.0	2.8
Ether extract %	1.6	1.6
Ash %	2.0	2.0
Digestible energy Kcal/kg	3402.0	3402.0
Total phosphorus	0.41	0.30
Sodium %	.06	.06
Magnesium %	.11	.11
Potassium %	.50	.50
Copper ppm	10.6	10.6
Iron ppm	50.0	43.0
Manganese ppm	62.2	51.3
Selenium ppm	.06	.06
Zinc ppm	14.0	14.0
Vitamin E mg/kg	15.5	15.5
Biotin mg/kg	100.0	100.0
Choline mg/kg	778.0	778.0
Niacin mg/kg	56.1	48.4
Thiamine mg/kg	5.2	4.8
Riboflavin mg/kg	1.1	1.2

Feed	Dry Matter	Nutrient Energy	Factor Protein	Value Energy	Factor Protein
<i>Dry forages</i> (standard value: mid-bloom alfalfa hay at \$100 per ton)					
alfalfa hay					
early bloom	89%	104	108	\$104	108
mid-bloom	89%	100	100	\$100	100
late bloom	89%	96	97	\$ 96	97
brome hay	89%	94	66	\$ 94	94
orchardgrass hay	88%	102	57	\$102	57
timothy hay					
early bloom	88%	106	50	\$106	50
mid-bloom	88%	100	49	\$100	49
late bloom	88%	100	48	\$100	48
oat straw	89%	94	26	\$ 94	26
clover hay	89%	107	87	\$107	87
<i>Grains</i> (standard value: dry shelled corn at \$107 per ton)					
shelled corn	89%	100	100	\$107	107
ear corn	89%	99	101	\$106	108
wheat	89%	97	123	\$104	132
oats	89%	84	147	\$ 90	157
barley	89%	90	121	\$ 96	129
potato chips	97%	81	86	\$ 87	92
popcorn	94%	80	158	\$ 86	169
pasta	94%	83	84	\$ 89	90
whole potatoes	23%	90	100	\$ 96	107
<i>Wet forages</i> (standard value: corn silage (35% dry matter) at \$20 per ton)					
corn silage	35%	100	100	\$ 20	20
alfalfa haylage	40%	73	193	\$ 17	44
Sorghum sudan haylage	30%	99	99	\$ 17	17
apple pomace	21%	77	53	\$ 9	6
potato silage	25%	117	94	\$ 17	13
<i>Protein feeds</i> (standard value: soybean meal (44% crude protein) at \$300 per ton)					
soybean meal	90%	100	100	\$300	300
whole soybean	90%	103	95	\$309	285
whole cottonseeds	90%	108	52	\$324	156
<i>Distillers grains</i> (dried)					
barley	90%	78	68	\$234	204
corn	90%	97	52	\$291	156
brewers	90%	74	58	\$222	174
wheat mids	90%	78	64	\$234	192
dried bean					
canning waste	35%	75	50	\$ 88	58
corn gluten feed	45%	93	102	\$140	153
feather meal	90%	71	198	\$213	593
fishmeal	90%	82	152	\$246	457
poultry litter	89%	67	66	\$203	200



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