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**BUYING
AND
SELLING**

Alfalfa Hay, Corn Silage, Barley

Each year thousands of tons of alfalfa hay, corn silage and barley are bought and sold in Idaho. These feeds are key ingredients in nearly all dairy and livestock rations. Animal performance in terms of milk or meat produced from these feeds depends on the quality of the hay, silage or grain in the ration. Feeding value is determined by concentration and digestibility of nutrients. Since the concentration of nutrients is quite variable in most feeds value is also variable. A wide range exists in alfalfa protein, corn silage dry matter and barley bushel weight. These differences in nutrient content mean dollars and cents to the livestock or dairy producer. Furthermore, the silage, hay or grain grower should be paid on the basis of the quality of feed he produces.

Many states have developed feed standards to compensate for the variations in quality. Relatively few have been successful because of variability in feed supplies, pricing misunderstandings between growers and producers and complex chemical analysis requirements.

Feed purchasing guidelines must be: (1) easy to understand, (2) based on a simple, fast, inexpensive test, (3) designed to reflect the difference in animal performance as related to feed quality and (4) fair to both the feed producer and the stockman or dairyman.

The following guidelines meet these requirements. They are a result of producer input combined with reviews of feed testing summaries and animal research performance data. These purchasing guidelines have been adopted by the boards of directors of the Idaho Cattle Feeder's Association and the Idaho Dairyman's Association. Their suggestions and recommendations have been incorporated.

Buying and Selling Alfalfa Hay

Crude protein is a good measure of alfalfa hay quality. It provides a simple means of determining the nutrient value. Moisture is also a key factor in determining price. Using a combination of

crude protein and dry matter, average selling price can be adjusted to reflect the nutrient and feeding value. Table 1 presents relative value indexes for alfalfa hay at various moisture and crude protein levels. To determine the fair value of a particular lot of alfalfa hay, multiply the

Table 1. Relative value indexes for alfalfa hay at various moisture and crude protein levels.

% DRY MATTER	% CRUDE PROTEIN										
	12	13	14	15	16	17	18*	19	20	21	22
70	.53	.57	.62	.66	.71	.75	.80	.84	.88	.93	.97
71	.54	.58	.63	.67	.72	.76	.81	.85	.90	.94	.99
72	.55	.59	.64	.68	.73	.77	.82	.86	.91	.95	1.00
73	.55	.60	.65	.69	.74	.78	.83	.88	.92	.97	1.01
74	.56	.61	.65	.70	.75	.79	.84	.89	.93	.98	1.03
75	.57	.62	.66	.71	.76	.80	.85	.90	.95	.99	1.04
76	.58	.62	.67	.72	.77	.82	.86	.91	.96	1.01	1.06
77	.59	.63	.68	.73	.78	.83	.88	.93	.97	1.02	1.07
78	.59	.64	.69	.74	.79	.84	.89	.94	.98	1.03	1.08
79	.60	.65	.70	.75	.80	.85	.90	.95	1.00	1.05	1.10
80	.61	.66	.71	.76	.81	.86	.91	.96	1.01	1.06	1.11
81	.61	.66	.72	.77	.82	.87	.92	.97	1.02	1.07	1.13
82	.62	.67	.72	.78	.83	.88	.93	.98	1.04	1.09	1.14
83	.63	.68	.73	.79	.84	.89	.94	1.00	1.05	1.10	1.15
84	.64	.69	.74	.80	.85	.90	.95	1.01	1.06	1.11	1.17
85	.64	.70	.75	.80	.86	.91	.97	1.02	1.07	1.13	1.18
86	.65	.70	.76	.81	.87	.92	.98	1.03	1.08	1.14	1.19
87	.66	.71	.77	.82	.88	.93	.99	1.04	1.10	1.15	1.21
*88	.67	.72	.78	.83	.89	.94	1.00	1.06	1.11	1.17	1.22
89	.67	.73	.79	.84	.90	.96	1.01	1.07	1.12	1.18	1.24
90	.68	.74	.80	.85	.91	.96	1.02	1.08	1.14	1.19	1.25
91	.69	.75	.80	.86	.92	.98	1.03	1.09	1.15	1.21	1.26
92	.70	.76	.81	.87	.93	.99	1.05	1.10	1.16	1.22	1.28
93	.70	.76	.82	.88	.94	1.00	1.06	1.12	1.17	1.23	1.29
94	.71	.77	.83	.89	.95	1.01	1.07	1.13	1.19	1.25	1.30

*88% dry matter and 18% crude protein assumed standard.

average selling price for alfalfa hay by the index value for the moisture and crude protein level of the hay in question. Example:

Alfalfa Hay A — 87% D. M. and 16% C. P.

Alfalfa Hay B — 86% D. M. and 20% C. P.

Average (current) selling price is \$50/ton.

Alfalfa Hay A — \$50 x .88 = \$44.00

Alfalfa Hay B — \$50 x 1.08 = \$54.00

Therefore, hay B is actually worth \$10/ton more than hay A.

Buying and Selling Corn Silage

Dry matter content is the most important factor in buying and selling corn silage. If the price per ton is based on the percent dry matter, both the buyer and seller receive a fair deal. The price adjustment factors in Table 2 are based on dry matter and represent the nutrient content of the silage.

Using The Price Adjustment Factors

To determine the fair value of a particular lot of corn silage, multiply the average selling price for corn silage by the price adjustment factor for the silage dry matter. Examples:

Silage A — 28% dry matter

Silage B — 30% dry matter

Silage C — 33% dry matter

Average corn silage selling price is \$14/ton.

Silage A — \$14 x .93 = \$13.02

Silage B — \$14 x 1.00 = \$14.00

Silage C — \$14 x 1.10 = \$15.40

Table 2. Dry matter content as relates to price for corn silage.

Silage dry matter %	25	26	27	28	29	30	31	32	33	34	35
Price adjustment factor	.83	.87	.90	.93	.97	1.00	1.03	1.07	1.10	1.13	1.17

Table 3. Bushel weight of barley as relates to price.

Barley bushel weight	40	41	42	43	44	45	46	47	48	49	50	51	52
Price adjustment factor	.83	.85	.88	.90	.92	.94	.96	.98	1.00	1.02	1.04	1.06	1.08

Buying and Selling Barley

Bushel weight of barley is a good indication of its relative feeding value. As bushel weight decreases, fiber content increases and energy values decrease. Basing the price per ton of barley on its bushel weight will reflect its feeding value. Thus, the price should be adjusted to bushel weight. Adjustments for moisture levels and foreign material, including other grains, are at the buyer's discretion.

Using The Price Adjustment Factors

To determine the fair value of a particular lot of barley, multiply the average selling price for barley by the price adjustment factor for the barley bushel weight (Table 3). Examples:

Average barley selling price is \$110/ton.

Bushel weight of barley at 51 pounds—

Calculated value: \$110 x 1.06 = \$116.06/ton

Bushel weight of barley at 43 pounds—

Calculated value: \$110 x .90 = \$99/ton

Feed Sampling and Testing

Alfalfa Hay

Baled hay should be sampled with a "Penn State Forage Sampler." Commonly called a "hay core," the tube sampler cuts a core of hay from within the bale. The number of bale samples depends on the size of the stack. Usually 10 to 20 bales should be selected at random, sampled and the samples placed in an airtight plastic bag. If you need assis-

tance, contact your local Extension Agricultural Agent. Most county Extension offices own and will lend the "Penn State Forage Sampler." Your agent can also provide a listing of feed testing laboratories.

Corn Silage

Sampling is also important in testing corn silage. Select several sites across the open end of the pit. Collect a couple of handfuls from each site and place them in a plastic tub or bucket; then mix the samples. Take a smaller (about a quart) sample from the mixed silage and place it in an airtight plastic bag for testing.

If silage is purchased in the field, collect samples from random truckloads. You may want to sample each load as it is delivered to the pit. Dry matter content can be determined by portable testing units, drying ovens or a commercial feed testing laboratory. Proper collection and handling will help insure accurate test results.

Barley

Bulk barley samples should be taken with a slotted grain tube. At least 20 cores should be taken from large bulk quantities. Place sample in an airtight bag for bushel weight determination. The apparatus necessary for determining bushel weight is simple to use. If you purchase barley on a regular basis, you should own a bushel weight tester. For occasional determination, a feed testing laboratory or a commercial feed mill can be used to determine bushel weight.

Summary

These purchasing guidelines provide a simple and fair method of pricing feed on a quality and animal performance basis. Price, testing methods and adjustments should be agreed upon by the buyer and seller before final purchase. For further assistance or information, contact the University of Idaho Extension Agricultural Agent in your county.

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