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How do your feeds compare?

FLUCTUATING milk and feed prices, coupled with varying availabilities and nutrient compositions of feed ingredients, can make it difficult to determine the most economical feed ingredients for the dairy herd. Also, the way that feed ingredients are priced has changed over the years.

For example, the price of alfalfa hay used to be driven by hay's visual characteristics, such as color, leafiness, pliability and moisture content. Today, the alfalfa hay price is usually driven by nutritive-value indices. These include relative feed value (RFV) or relative forage quality (RFQ), which classify alfalfa as "Supreme, Premium, Good or Fair Quality" based on nutrient composition.

Updated decision tools are available that allow farmers and nutritionists to use composition data when calculating the nutrient value of feed ingredients. This information is used to determine break-even prices to make better buying decisions.

Determine feed's value

One of these decision support tools is FeedVal. This tool determines the nutrient value of feed ingredients by aggregating the value of individual nutrients contained in the feed. With that rationale in mind, the dairy management extension program at the University of Wisconsin-Madison has updated this tool to help decision-makers value feed ingredients.

The most recent online version of FeedVal is a more dynamic, user-friendly and robust decision support system tool than previous versions.

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FeedVal v6.0 is live connected to current data price sources. The tool allows selected nutrients (between two to 13 nutrients) and feed ingredients (up to 40 ingredients) to be used in a specific analysis, depending on the needs of a farm or feed mill.

FeedVal v6.0 allows full user customization of names, nutrient composition and available market prices of feed ingredients to calculate the predicted nutrient value of a feed as a percentage of its market price. The actual value of an ingredient is the sum product of its nutrient contents by their individual nutrient prices. It also predicts the nutrient value of feeds that do not have attainable market prices at the time of the analysis.

As a demonstration, let's analyze five feed ingredients during the last two years. This analysis used the following nutrient composition for each feed: rumen undegradable protein (RUP, percent of dry matter [DM]), rumen degradable protein (RDP, percent of DM), net energy for lactation (NEL, Mcal/lb. DM) and physically effective neutral detergent fiber (peNDF, percent of DM).


The five feed ingredients used were: soybean meal, dried distillers grains, whole cottonseed, corn gluten feed and alfalfa hay. Market prices for the analysis were from the months of March, June, September and December for 2013 and 2014 to represent the fluctuation of prices during those years, and for the month of March 2015.

FeedVal v6.0 shows the potential opportunities for using feed ingredients that have a better return on investment considering their actual prices and predicted values based on nutrient composition. For example, whole cottonseed had a greater mar-

ket price than predicted value in each time period; the actual price as a percentage of predicted value was greater than 100 percent (see table). This means the market price was greater for a ton of whole cottonseed than the value of its nutrients.

A similar situation occurred for soybean meal in 2013, but in 2014 the market price was close to or below the predicted value. Therefore, soybean meal had a better value as a source of nutrients in some of 2014 and March 2015 than in 2013. On the other hand, corn gluten feed and dried distillers grains are two feed ingredients that almost always had a market price below their predicted value. These two feed ingredients showed potential economic value when included in the diets of lactating cows because their predicted value was greater than their market price.

For alfalfa hay, the market price in 2014 was different than 2013. From 2013 to March 2014, the market price was similar to or lower than its predicted value, and thus a reasonably priced feed ingredient. However, after March 2014, alfalfa hay market prices were greater than predicted values, indicating that we should have been looking for alternative sources of peNDF or alfalfa hays with better nutrient composition versus market price relationships.

The current example included only five feed ingredients analyzed for four nutrients. However, you can consider more feed ingredients that are available locally for diet formulation and additional nutrients when using FeedVal v6.0 to help select potentially desirable feed ingredients for purchase. 

Market price and predicted value (\$/ton) for five common feeds

Feed	Month	2013			2014			2015		
		Market price \$	Predicted value \$	Market as % of predicted	Market price \$	Predicted value \$	Market as % of predicted	Market price \$	Predicted value \$	Market as % of predicted
Soybean meal	March	437	429	102	498	562	89	358	389	92
	June	497	464	107	502	486	103			
	Sept.	500	478	105	526	509	103			
	Dec.	498	479	104	432	460	94			
Whole cottonseed	March	265	247	107	350	258	136	265	222	119
	June	315	297	106	408	278	147			
	Sept.	335	292	115	335	224	150			
	Dec.	257	271	95	225	217	104			
Corn gluten feed	March	204	275	74	178	277	64	107	224	48
	June	151	289	52	132	279	47			
	Sept.	136	277	49	99	246	40			
	Dec.	168	269	63	143	236	61			
Dried distillers grains	March	271	258	105	245	420	58	190	299	63
	June	236	368	64	185	377	49			
	Sept.	230	372	62	123	377	33			
	Dec.	221	369	60	159	345	46			
Alfalfa hay	March	219	219	100	193	201	96	172	157	109
	June	218	219	99	222	207	107			
	Sept.	194	207	94	197	185	106			
	Dec.	186	199	94	183	152	120			

Market prices source: USDA, Agricultural Marketing Service, http://www.ers.usda.gov/media/1820902/fds_15d.pdf for SBM, CGF, DDG, and AH; and <http://www.feedstuffs.com> for WCS.



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