

## Feed Ingredient Prices and the Cost of Nutrients

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Continuing in the tradition established by Dr. St-Pierre, who's currently enjoying a sabbatical leave from OSU, the SesameIII™ software was used to estimate the cost of the key nutrients and predict break-even prices of commodities and forages used in dairy rations (Table 1). Net Energy of Lactation (NEL) is estimated at 9.6¢/Mcal, which is lower than the ~15¢/Mcal we saw during Fall 2008, but still higher than the 20-year historic average of 5¢/Mcal. Metabolizable Protein (MP) at 47¢/lb is on the higher end of the spectrum, which has ranged from 35 to 50¢/lb during the past couple of years. The price of animal proteins is heavily impacting this value, as they contribute significantly to the digestible rumen-undegradable protein portion of MP. Non-effective neutral detergent fiber (neNDF) and effective NDF (eNDF) are -12 and 2.5¢/lb, respectively, well within their normal ranges. It is common for neNDF to be negative, as feeds that have high levels of this nutrient, such as by-products like distillers' grains, corn gluten feed, etc., are discounted in the market relative to other feeds. Good- to high-quality, home-grown forages continue to be an excellent and inexpensive source of effective NDF.

Feed prices have continued to decrease since last winter, with vegetable proteins in particular decreasing over the past two months. The prices of most feedstuffs have gone down over the past four months, with the exception of animal proteins (blood meal, hydrolyzed feather meal, and meat-and-bone meal). Think about it – corn prices have decreased significantly from their all time historical highs during the ethanol boom in 2007. We're actually starting to approach the \$120-\$130/ton prices we saw before the boom in 2005.

Based on mid August wholesale prices for central Ohio, feed commodities fall into three groups:

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Bargains	At Breakeven	Overpriced
Bakery byproduct	Alfalfa hay 44NDF 20CP	Canola meal
Brewers' grains, wet	Blood meal	Cottonseed meal 41%
Corn grain, ground	Cottonseed, whole	Fish meal
Corn silage	Feather meal	Molasses
Distillers' grains w/sol	Soybeans, whole	Soybean meal 44%
Gluten feed	Expeller SBM	Soybean meal 48%
Gluten meal	Tallow	Soyhulls
Hominy	Wheat bran	
Meat and bone meal		
Wheat midds		

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The usual caveats with SesameIII™ results apply. You cannot formulate a balanced diet using only the feeds in the Bargains column. These feeds represent savings opportunities and can be utilized in rations to reduce feed costs within the limitations of provided a balanced nutrient supply to the dairy cow. Prices for commodities can vary because of quality differences as well as non-nutritional value added by some suppliers in the form of nutritional services, blending, terms of credit, etc. Feeds may also bring value to a ration in addition to their nutrient value, e.g. tallow as a “carrier” and dust suppressant in vitamin/mineral pre-mixes and molasses as a source of sugars.

The detailed results of the SesameIII™ analysis are given in Table 1. The lower and upper limits give the 75% confidence range for the predicted Break-Even prices. Feeds in the “Appraisal Set” are either those that were completely out of price (outliers) or had unknown prices such as the alfalfa hays of different nutritional quality.

Table 1. Prices of dairy nutrients, and actual wholesale, breakeven (predicted) and 75% confidence limits for feed commodities used on Ohio dairy farms.

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Price Prediction Reliability 51.223

<b>Estimate of Nutrient Unit Costs</b>	
Nutrient name	Estimate
NEI - 3X (2001)	0.095753 **
Metabolizable Protein (MP, g)	0.465768 **
ne-NDF	-0.122349 **
e-NDF	0.025328

- A blank means that the nutrient unit cost is likely equal to zero
- ~ means that the nutrient unit cost may be close to zero
- \* means that the nutrient unit cost is unlikely to be equal to zero
- \*\* means that the nutrient unit cost is most likely not equal to zero

<b>Calibration set</b>							
Name	Actual [T]	Predicted [T]	Lower limit	Upper limit	Corrected	75.0% CI	75.0% CI
Alfalfa Hay 44NDF 20CP	165.000	160.128	127.665	192.591	163.310	130.847	195.773
Bakery Byproduct Meal	190.000	211.402	195.201	227.602	-	-	-
Blood Meal, ring dried	745.000	729.168	690.266	768.070	-	-	-
Brewers Grains, wet	35.000	41.255	35.471	47.039	-	-	-
Canola Meal, mech. extracted	287.000	220.342	206.024	234.661	-	-	-
Corn Grain, ground, dry	157.000	221.959	207.317	236.601	-	-	-
Corn Silage, 32-38% DM	55.000	62.893	51.898	73.888	62.893	51.898	73.888
Cotton Seed Meal, 41% CP	343.000	305.567	288.957	322.177	-	-	-
Cotton Seed, Whole w lint	262.000	260.289	215.769	304.810	-	-	-
Distillers Dried Grains w Sol	125.000	225.608	202.939	248.277	-	-	-
Feathers Hydrolyzed Meal	545.000	562.484	536.497	588.470	-	-	-
Gluten Feed, dry	120.000	188.398	172.356	204.440	-	-	-
Gluten Meal, dry	525.000	576.528	550.009	603.048	-	-	-
Hominy	140.000	183.683	169.376	197.991	-	-	-
Meat Meal, rendered	400.000	424.148	406.033	442.263	-	-	-
Molasses, Sugarcane	200.000	159.751	147.045	172.456	-	-	-
SBM 44% adj.	423.000	320.637	307.520	333.754	-	-	-
SBM 48% adj.	433.000	382.359	367.610	397.108	-	-	-
Soybean Seeds, whole roa	395.000	411.405	387.633	435.177	-	-	-
Soybean hulls adj.	145.000	77.389	42.204	112.575	-	-	-
Tallow	520.000	497.676	447.594	547.757	-	-	-
Wheat Bran	109.000	101.840	76.025	127.655	-	-	-
Wheat Middlings	102.000	131.261	109.076	153.447	-	-	-
expeller SBM, adj.	468.000	447.679	428.533	466.824	-	-	-

<b>Appraisal set</b>			
Name	Actual [T]	Predicted [T]	Corrected
Alfalfa Hay 38NDF 22CP	0.000	177.442	199.796
Alfalfa Hay 48NDF 17CP	0.000	148.620	128.683
Fish Menhaden Meal, mech	870.000	580.868	-

<b>Calculation log</b>	
Action	Reason
Feedstuffs "Fish Menhaden Meal, mech." removed	Outlier

Sesame 3.03: Regression results (Sesame [Administrator])



While feed costs are down and this will help improve income-over-feed costs, producers will still want to work closely with their nutritionists and feed sales representatives to control feed costs. Keep in mind that feeding for milk components is very worthwhile economically. This will be especially true through September and October with the temporary, additional dairy product price supports provided by the USDA. Improving milk fat by 0.20% and milk protein by 0.10% on a 100-cow herd averaging 65 lbs of milk will be worth \$500 to \$600 more income per month to the dairy producer. This estimate includes the cost of the increased nutrients required to produce the milk fat and protein.