Costs of Nutrients and the Cow-Jones Index for Ohio Dairy Farms – Sept 2008

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Feed prices are going through all kind of gyrations, with the corn and soybean markets operating on all sorts of rumors, while all other feed ingredient markets are trying to find equilibrium prices in a feed pricing world that is constantly changing. Table 1 reports the results of our usual monthly Sesame analysis, using bulk, TTL, wholesale prices for central Ohio.

Table 1. Actual, breakeven (predicted) and 75% confidence limits of 27 feed commodities used on Ohio dairy farm.[1]

Calibration set							
Name	Actual [/T]	Predicted [/T]	Lower limit	Upper limit	Corrected	75.0% CI	75.0% CI
Alfalfa Hay - 44 NDF 20 C	230.000	288.670	207.907	259.433	288.670	207.907	259.433
Bakery Byproduct Meal	200.000	279.227	269.704	291.091	-	-	-
Brewers Grains, wet	49.000	38.443	33.123	43.764			
Canola Meal, mech. extrac	260.000	231.663	219.126	244.182			
Citrus Pulp dried	250.000	214.515	204.089	224.942	-	-	-
Corn Grain, ground, dry	220.000	284.161	273.118	295.183	-	-	-
Corn Silage, 32-38% DM	39.120	87.375	79.031	95.720	87.375	79.031	95.720
Cotton Seed Meal, 41% C	355.000	285.278	270.775	299.781	-	-	-
Cotton Seed, Whole w lint	405.000	380.301	347.123	413.478			
Distillers Dried Grains w S	175.000	209.920	189.317	230.523	-	-	-
Feathers Hydrolyzed Meal	485.000	512.911	487.269	538.553			
Gluten Feed, dry	138.000	218.361	204.704	232.018			
Gluten Meal, dry	624.000	510.966	485.012	536.919	-	-	-
Hominy	210.000	227.377	215.963	238.790			
Meat Meal, rendered	440.000	449.170	433.036	465.303	-	-	-
Molasses, Sugarcane	200.000	221.797	212.029	231.565	-	-	-
Soybean Meal, expellers	426.000	429.388	412.282	446.488			
Soybean Meal, solvent 44	387.000	350.090	339.759	360.437	-	-	-
Soybean Meal, solvent, 48	396.000	399.094	386.248	411.940			
Soybean Seeds, whole no	473.000	509.667	491.678	527.718			
Tallow	730.000	755.980	717.063	794.877	-	-	-
Wheat Bran	132.000	96.879	71.887	119.872			
Wheat Middlings	125.000	133.321	112.941	153.700	-	-	-

Appraisal set			
Name	Actual [/T]	Predicted [/T]	Corrected
Alfalfa Hay - 36 NDF 22 C	0.000	258.102	295.273
Alfalfa Hay - 48 NDF 17 C	0.000	218.404	199.673
Beet Sugar Pulp, dried	500.000	150.374	-
Blood Meal, ring dried	905.000	610.176	
Fish Menhaden Meal, mec	995.000	636.301	
Soybean Hulls	101.000	12.992	-

[1] Prices are those that were in effect in mid August, 2008. Actual prices can be significantly different across suppliers depending on the specific quality of a given commodity, terms of delivery and payment,

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and other services provided with the commodity. These figures should only be used as general guides. Assistance from a professional dairy nutritionist is recommended.

In mid August, bargain feeds were: ground shelled corn, corn silage, distillers dried grains, corn gluten feed, corn hominy, molasses, and roasted soybeans. Overpriced feeds were: canola meal, dried citrus pulp, cottonseed meal, 44% soybean meal, beet pulp, blood meal, fish meal, and soybean hulls. One should take note that this evaluation does not account for the amino acid composition of the feeds, something that is considered important in high producing herds and that would affect the breakeven prices of a few commodities, particularly blood meal and fish meal.

The implicit prices of nutrients are reported in the next table.

Table 2. Prices of dairy nutrients, Ohio, August 2008.

Estimate of Nutrient Unit Costs		
Nutrient name	Estimate	
NEl - 3X (2001)	0.170927	**
Metabolizable Protein (MP	0.242173	**
ne-NDF	-0.219437	**
e-NDF	0.071677	*

To put these prices in perspective, in the last 44 months (i.e., since January 2005) net energy for lactation (NEl), metabolizable protein (MP), non-effective NDF (ne-NDF), and effective NDF (e-NDF) have averaged $0.10/Mcal, $0.20/lb, -$0.09/lb, and $0.02/lb, respectively. Thus, dietary energy and effective fiber are currently very expensive, whereas MP is about at its average price, while non-effective NDF is severely discounted.

We know relatively well the nutritional requirements of lactating cows. Using the equations published by the National Research Council (2001), it is relatively easy to calculate the nutrient requirements of what we have coined “our standard cow”: a 1500 lbs Holstein, producing 65 lbs of milk per day, at 3.6% fat, 3.0% protein, and 5.7% other solids. This standard cow requires about 31.3 Mcal (mega-calories) of NEl, 4.64 lbs of MP, 10.1 lbs of e-NDF, and 3.4 lbs of ne-NDF. Knowing the average costs of these nutriments as reported in Table 2, one can then calculate a “standard” daily cost for providing these nutrients to our standard cow. These are the “nutrient costs” reported in Table 3. This standard daily nutrient cost currently stands at $ 6.46/cow per day, a figure markedly greater than the average of $3.90 since January 2005. Expressed per hundredweight (cwt), the standard nutrient cost is currently at $9.94/cwt (compared to an average of $6.00/cwt). Some milk component prices are also above their 3-year average: $1.74 vs. $1.50/lb of milk fat, and $3.64 vs. $2.95/lb of milk protein, but “other solids” are currently priced well below their average: $0.05 vs. $0.21/lb. The difference between the milk income from our standard cow and the cost of supplying the nutrients to produce this milk currently stands at $4.92/cow per day, or $7.58/cwt, a figure that we have named the **Cow-Jones Index** (CJI – we need to have a bit of fun sometimes…).

Importantly, the CJI has barely broken the $9.00 mark since last February. Based on current farm input prices, the break-even level for the index is somewhere between $8 and $9/cwt for Ohio dairy producers. The index stood at $7.15/cwt in July. It is the

Table 3. Calculation of the Cow-Jones Index (CJI), September, 2008.

Date:	Sep-08		
Animal inputs			
Cow weight (lbs)	1500		
Milk (lbs/d)	65		
Fat %	3.6		
Prot %	3		
Other solids %	5.7		
Milk component prices inputs			
Fat ($/lb)	$ 1.7413		
Protein ($/lb)	$ 3.6497		
Other solids ($/lb)	$ 0.0529		
Nutrient costs inputs			
NE_L ($/lb)	$ 0.1709		
MP ($/lb)	$ 0.2422		
e-NDF ($/lb)	$ 0.0717		
ne-NDF ($/lb)	$ (0.2194)		
Nutrient Requirements Calculations			
NE_L (Mcal)	31.33		
MP (lbs)	4.64		
e-NDF (lbs)	10.15		
ne-NDF (lbs)	3.38		
Milk Income	***$/cow d***		***$/cwt***
Fat	$ 4.07	$	6.27
Protein	$ 7.12	$	10.95
Other solids	$ 0.20	$	0.30
TOTAL	$ 11.39	$	17.52
Nutrient Costs	***$/cow d***		***$/cwt***
NE_L	$ 5.35	$	8.24
MP	$ 1.12	$	1.73
e-NDF	$ 0.73	$	1.12
ne-NDF	$ (0.74)	$	(1.14)
TOTAL	$ 6.46	$	9.94
Income over nutrient costs			
	$ 4.92	$	7.58
(Cow-Jones Index)		$	7.58

second month in a row that the CJI stands below the threshold of $8/cwt in what has been so far a lackluster year in dairy. This indicates that when dairy producers finally face the full blunt of the surge in feed prices – when feed contracts have expired, when the new corn silage crop is harvested, etc. – the Ohio dairy industry will find itself in a very similar situation as the one we went through in 2006. We all remember that it wasn't pretty… Time to manage and control the feed process. More about this next month.