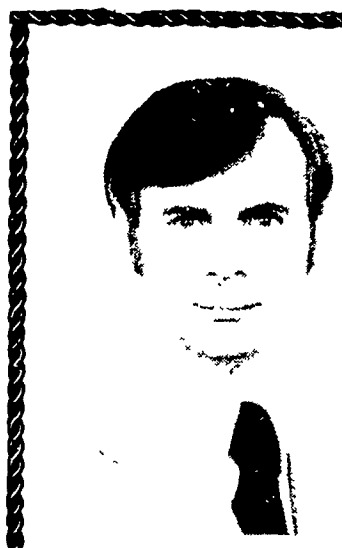

Dairy Pipeline

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Pricing Dairy Feeds and Adjusting Rations

High feed prices, drouth-sticken crops and lower milk prices are forcing dairymen into making some difficult decisions concerning their feeding programs. Will I have enough feed of the quality I need? Which feeds are the best buys? What are feeds worth? How do I substitute one feed for another? What changes will I need to make in my rations to help compensate for variances in quality and loss of yield? These are only a few of the questions.

Feeds are purchased for the dry matter they contain, and for the amount, kind and balance of nutrients in that dry matter. Traditionally, we have used the price of a 100 lbs. of dry shelled corn as the basis for determining the value of energy in feeds. The value of the protein in feeds is determined from the price of a 100 lbs. of 44% soybean oil meal.

Knowing this, we can determine how much to pay for different feeds and feed ingredients. Here's how the process works. Follow the steps below, and complete the formulas.

Step 1. Price of dried shelled corn per bu. — x 1.8 = price of dried shelled corn per cwt. $—.

Step. 2. Price of 48% soybean oil meal per ton — ÷ 22 = approximate price of 44% soybean oil meal per cwt. $—.

Step 3. Calculate the energy values in column 7 of the table by multiplying the shelled corn factors in column 5 times the answer in Step 1.

Step 4. Calculate the protein values in column 8 of the table by multiplying the soybean oil meal factors in column 6 times the answer in Step 2.

Step 5. Add or subtract the values in columns 7 and 8, depending on what the signs indicate, to arrive at the feeding value per cwt. in column 9.

Step 6. Convert value per cwt. to value per T. or per bu. (column 11) by using the conversion factors in column 10.

Step 7. Enter the purchase price for the feeds of your choice in column 12, and compare them to the computed maximum values in column 11. If column 12 is less than column 11, the feed is a good buy. The greater the percentage saved, the better is the buy — providing you need that particular feed, you can store it and handle it satisfactorily with little or no additional costs or inconveniences, and you can use it in your ration without creating expensive herd health problems.

Step 8. Wait! Column 11 is the maximum value only of the energy and protein contained in that feed. It's only a guide. Chances are, you will not want to pay that price because of the reasons mentioned in the preceeding paragraph. So, adjust these prices (columns 11 and 12) for such things as:

a. Moisture levels —
b. Harvesting costs —
c. Transportation costs —
d. Additional storage costs —
e. Grinding costs —
f. Nutrient differences —
g. Quality (molds, weeds, fiber, length of cut, maturity, additives) —
h. Storage losses —
i. Other —
j. Total adjustment —

Calculating Price Adjustments

Moisture adjustments can be calculated as follows: dry matter of the feed purchased ÷ dry matter of that same feed listed in the table X price of that feed in the table. For example, if 70% moist (30% DM) silage is valued at $35 per ton in the table, what is 60% (40% DM) silage worth? 40% DM ÷ 30% DM X $35 = $46.67 per ton — before adjustments. Is 50% moist silage worth still more because it contains more DM? I don't think so, because of the risk of poorer fermentation. Use good judgement.

Adjustments for differences in TDN can be made by using the price of shelled corn in Step 1 — let's say it is $8.10 per cwt. — and dividing it by the TDN content of shelled corn (80), as shown in column 4 of the table. This gives us a rough estimate of the value of 1 lb. of TDN. The answer in this example is $8.10 ÷ 80 = $.10 per lb. of TDN.

The price per lb. of CP is similarly calculated. Let's say we calculated the price of 44% SBOM in Step 2 to be $15.00 per cwt. In column 3 of the table, we find its CP content to be 45%. The approximate value of a lb. of CP would be $0.33 ($15.00 ÷ 45 = $0.33).

Next calculate the difference in lbs. of TDN and CP per ton, per cwt., or per bu. of the feed in question compared to its composition as listed in the table. Multiply these differences by the values calculated in the preceeding paragraphs, and adjust the price accordingly.

How much is a crop worth per acre, or per cutting? Estimate the yield, the moisture and the quality of the crop, and multiply it by the adjusted values, above. This will serve as a guide.

Also, remember, high producing cows need high quality feeds. They won't produce as well as mediocre feeds, which may be quite acceptable for heifers and lower producers. Thus, mediocre feeds, which may appear to be a good buy, could turn out to be very expensive feeds if they restrict production of good cows.

Remember too, your feedman is also making those good buys, and its going to be hard to beat a pro at his own game. In other words, don't separate yourself from good feeds and from the services of good feedmen which you may need.

Ration Adjustments

Column 13 is a guide as to the maximum amount of some feeds that can safely be fed under good management, expressed either as a percent of the grain mix or total pounds per cow per day. The lower levels would be less risky.

Ration changes should be done gradually and with great care. Give cows several weeks to adjust to changes in the ration, and work closely with your feedman to keep the ration properly balanced.

What changes do you need to make in the ration when you substitute one ingredient for another? The factors in columns 5 and 6 of the table can be a useful guide if you do the opposite of what the sign in front of the factors indicates. For example, you may want to add some barley to your grain mix. How much corn and soybean oil meal (SBOM) would you take out? About 0.938 lbs. of shelled corn and 0.073 lbs. of 44% SBOM," for each lb. of barley added. "But, I don't use shelled corn and 44% SBOM," you say; "I use 48% SBOM and ear corn." In that case, still make the above calculations, and then multiply the shelled corn answer by 1.2 to convert it to ear corn. Divide the 44% SBOM answer, above, by 1.1 to convert it to 48% SBOM. You'll be fairly close. That would make it 1.13 lbs. of ear corn (.938 X 1.2 = 1.126) and .066 lbs. of 48% SBOM (.073 ÷ 1.1 = .0664).

Your Feed Situation

Examine your fields closely, not just the outside rows, but the inner sections, too. Estimate your yields; they may be less than you anticipated. You might need to purchase additional feeds. Or, perhaps some of those well eared fields that were going to go into the silo, should be combined. This year, in many areas, corn silage might be a better buy than corn grain. You might be able to "swap" your grain corn for other grains which are a better buy, and end up with more feed nutrients plus some fodder for bedding. If you are running short on forages, small grains such as rye, seeded this fall may give you some additional feed yet this fall and grain, next spring.

Test your forages for the routine nutrient analysis, plus minerals, and possibly nitrates, NPN and pH. It'll give you a good idea of the quality of feeds you have to work with and adjustments that may be needed in your feed program.

This year, poorly eared, immature, drouthy corn may test higher in nitrates, higher in protein and lower in energy. Moisture levels of silages may be different than expected; they may not be in the optimum range for best fermentation—and preservation. A pH test can be a clue. Properly fermented silages should have a pH of about 4.2 or less.

Hay crop forages usually contain appreciable amounts of non-

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COMPUTING THE VALUE OF FEEDS FED TO DAIRY CATTLE

Feed or Ingredient	As Fed Basis DM (%)	CP (%)	TDN (%)	Shelled Corn Factor	Soybean Oil Meal Factor	Energy Value/ cwt.	Protein Value/ cwt.	Feeding Value/ cwt.	Conversion Factor	Computed Maximum Value	Purchase Price	Max lbs. per day or % of Mix
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Barley	89	12	76	.938	.073	____+____=____			÷ 2.1 =	$____/Bu.	$____	20-50%
Corn - Ear	85	7	72	.914	- .015	____-____=____			X 20 =	____/T.	____	
Shelled	85	9	80	1.000	.000	____+ .00=____			÷ 1.8 =	____/Bu.	____	
Oats or Spelts:											—	
under 25% of mix	90	12	76	.933	.079	____+____=____			÷ 3.1 =	____/Bu.	____	0-25%
over 25% of mix	90	12	70	.813	.098	____+____=____			÷ 3.1 =	____/Bu.	____	25-60%
Rye	89	12	77	.786	.104	____+____=____			÷ 1.8 =	____/Bu.	____	10-20%
Soybeans	90	36	88	.399	.711	____+____=____			÷ 1.7 =	____/Bu.	____	4-5 lbs.
Wheat	89	10	80	.954	.056	____+____=____			÷ 1.7 =	____/Bu.	____	20-50%
Brewers Grains - Dry	93	24	67	.455	.393	____+____=____			X 20 =	____/T.	____	10-30%
- Wet	25	6	16	.121	.082	____+____=____			X 20 =	____/T.	____	20-40 lbs.
Corn Silage - Good Ears	30	2.4	21	.232	- .002	____-____=____			X 20 =	____/T.	____	
- Poor Ears	30	2.5	19	.174	- .001	____-____=____			X 20 =	____/T.	____	
Corn Factory Wastes	22	1.9	15	.189	- .004	____-____=____			X 20 =	____/T.	____	
Hay-Grass	89	9	52	.471	.045	____+____=____			X 20 =	____/T.	____	
-Mostly Grass	89	11	51	.411	.100	____+____=____			X 20 =	____/T.	____	
-Mostly Legume	88	13	52	.369	.152	____+____=____			X 20 =	____/T.	____	
-Legume	88	15	50	.278	.223	____+____=____			X 20 =	____/T.	____	
Alfalfa Meal, 17%	93	17	54	.286	.310	____+____=____			X 20 =	____/T.	____	
Beet Pulp	91	9	73	1.021	- .062	____-____=____			X 20 =	____/T.	____	25-40%
Citrus Pulp	90	6	75	1.048	- .021	____-____=____			X 20 =	____/T.	____	25-40%
Corn Gluten Feed, 24%	90	24	73	.526	.374	____+____=____			X 20 =	____/T.	____	15-25%
Corn Gluten Meal, 42%	92	42	79	.182	.836	____+____=____			X 20 =	____/T.	____	15-25%
Cottonseed	93	25	98	.656	.303	____+____=____			X 20 =	____/T.	____	
Cottonseed Meal, 41%	91	41	63	.029	.776	____+____=____			X 20 =	____/T.	____	0-20%
Distill. Corn Grains	93	24	83	.737	.306	____+____=____			X 20 =	____/T.	____	15-50%
Hominy Feed	90	11	83	1.053	.013	____+____=____			X 20 =	____/T.	____	40-50%
Linseed Oil Meal, solv.	91	36	70	.212	.698	____+____=____			X 20 =	____/T.	____	
Molasses	73	3	71	1.069	- .171	____-____=____			X 20 =	____/T.	____	1-10%
Soybean Oil Meal, 44%	92	45	78	.000	1.000	.00+____=____			X 20 =	____/T.	____	
48%	92	48	79	- .083	1.139	-____+____=____			X 20 =	____/T.	____	
Wheat Bran	90	15	67	.655	.191	____+____=____			X 20 =	____/T.	____	25-30%
Wheat Midds, std.	90	16	77	.777	.198	____+____=____			X 20 =	____/T.	____	10-30%