

Coping with high feed prices

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Point #1

- High milk prices provide a nice coping mechanism!

Point #2

- High quality forages help!

		<u>Forage NDF Content</u>		
		40%	45%	50%
		<u>Diet NDF_{forage}</u>	<u>% Diet Concentrate</u>	
High IVNDFD →	24%	40%	47%	52%
	21%	48%	53%	58%
Low IVNDFD →	18%	55%	60%	64%

		<u>Forage NDF Content</u>		
		40%	45%	50%
		<u>Diet NDF forage</u>	<u>lb. Concentrate DM</u>	
High IVNDFD →	24%	20	23.5	26
	21%	24	26.5	29
Low IVNDFD →	18%	27.5	30	32

Assumed 50 lb. DMI

		<u>Forage NDF Content</u>		
		40%	45%	50%
		<u>Diet NDF forage</u>	<u>Concentrate (\$/cow/d)</u>	
High IVNDFD →	24%	\$3.00	\$3.53	\$3.90
	21%	\$3.60	\$3.98	\$4.35
Low IVNDFD →	18%	\$4.13	\$4.50	\$4.80

Assumed concentrate price of \$0.15 per lb. DM

Point #3

- Feed efficiency matters!

How Does Your Feed Efficiency Compare?

Britt & co-workers, 2003
13 Commercial Dairy Herds

Average FE	1.4
FE range	1.1 - 1.8

Economic Impact Of Feed Efficiency

	Feed Efficiency			
	<u>1.4</u>	<u>1.5</u>	<u>1.6</u>	<u>1.7</u>
FCM, lb/d	70	75	80	85
DMI, lb/d		50		
IOFC, \$/cow/d	7.30	8.25	9.20	10.15

Assumed TMR cost of \$0.12 per lb. DM and milk price of \$0.19/lb.

Factors Influencing Feed Efficiency

- ❑ DIM
- ❑ Milk Yield — i.e. BST, mastitis, cow comfort, etc.
- ❑ Diet NDF, NDF-forage, ivNDFD & Starch
- ❑ Ionophore
- ❑ Bunk Management

Point #4

- Check on alternative feed options

Moderate Protein Corn:SBM Alternatives

	<u>Equivalent CP Corn:SBM Mix</u>
Brewers Grains	50:50
Distillers Grains	50:50
Corn Gluten Feed	60:40
Whole Cottonseed	60:40
Malt Sprouts	70:30
Wheat Midds	70:30
Whole Sunflower	70:30

Low Protein Corn Alternatives

Ingredient

Bakery	Soybean Hulls
Beet Pulp	Whey
Citrus Pulp	Starch
Hominy	Sugar
Molasses	Candy
Potato Byproducts	

Plant Protein SBM Alternatives

Ingredient

Canola Meal
Corn Gluten Meal
Cottonseed Meal
Hi-Protein Distillers
Linseed Meal
Sunflower Meal

NPN Alternatives

Breakeven Value¹

UW Feedval4; August, 2008

Ingredient	\$ per ton (as fed basis)
DDG	\$360

¹Relative to \$400/ton SBM-48 solv. & \$5.50/bu. corn

Opportunity Value¹

DDG	\$ per ton (as fed basis)
FEEDVAL Value	\$360
Market Price	\$200
Opportunity Value	+\$160

¹Relative to \$400/ton SBM-48 solv. & \$5.50/bu. corn

How much to feed?

➤ Feeding limits

- i.e. DDG at 10 to 20% of diet DM a reasonable target depending upon diet formulation constraints
 - i.e. High Fat & P and Low Lysine impediments to higher inclusion rates

➤ Least cost ration formulation for specified nutrients

- i.e. CP, RUP, NDF, Starch, Fat, NEL, etc., etc.

Point #5

- Lower starch diets may be possible!

Starch content of diets for lactating dairy cows?

	<u>n</u>	<u>Average</u>	<u>Min</u>	<u>Max</u>
Shaver et al., 2008 ≥30,000 lb RHA herds	9	27%	25%	30%
Bucholtz, 2006 ≥30,000 lb RHA herds	18	26%	24%	30%
Staples, 2007	Suggested 24% - 26% starch diets as "ideal" from summary of research literature			

Varying Diet Starch Content

➤ 21% starch diets appear acceptable, when

- ❖ High fiber, low protein byproducts, i.e. soyhulls, partially replace corn grain
- ❖ High fiber, moderate protein byproducts, i.e. DDG, partially replace corn grain & protein supplement

Varying Diet Starch Content

- The following can reduce the corn needed in high-starch diets or increase the “corn equivalency” of low-starch diets:
 - ❑ A higher proportion of corn silage in the forage mix
 - ❑ Feeding high-starch corn silage
 - ❑ Supplementing sugars
 - ❑ Use of Rumensin®

- The starch in low-starch diets should be highly digestible

Starch Digestibility

- ❑ High-Moisture Corn > Dry Corn
 - ❑ High-Moisture Corn; > with > moisture content
 - ❑ Ground > Rolled Corn; > with > fineness of grind
 - ❑ Steam-Flaked Corn > Dry Rolled; Varies with flake density
 - ❑ Floury Corn > Vitreous Corn
 - ❑ Rolled > Unrolled Corn Silage; varies by roll setting
 - ❑ Early > Late Maturity Corn Silage
- If low-starch diets are fed and the cost of starch is high, then it seems logical that the starch should be highly digestible

Point #6

■ Carefully evaluate

- ✓ on-farm forage/corn production costs vs. off-farm feed purchase costs
- ✓ potential for higher corn silage diets

The screenshot shows a PDF document titled "Impact of Feed Prices on Cost of Simulated Average and High Corn Silage Rations". The document is displayed in a Mozilla Firefox browser window. The title is centered at the top in red text. To the left of the title is a logo for the Dairy Team, and to the right is the Wisconsin TEAM Forage logo. Below the title, the authors are listed: Paul Dyk, Fand du Lac County Dairy & Livestock Agent, and Randy Shaver, Department of Dairy Science, UW Madison. The document text begins with a paragraph about the historical context of corn silage and haylage use in the US Midwest, starting from 1877. The second paragraph discusses the current situation in 2008, where high feed prices have led to questions about on-farm feed production versus off-farm purchases.

Impact of Feed Prices on Cost of Simulated Average and High Corn Silage Rations

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In 1877, August Goffart, a French farmer published a book called "The Ensilage of Maize and other Green Fodder Crops". From the title, it's apparent that both corn silage and haylage were being harvested and stored. In the US Midwest 130 years later, corn silage and haylage are still being fed to dairy cattle and there is still debate among dairy producers, nutritionists and economists as to what feeding rates are optimum.

In 2008, purchased feed prices have soared and the cost of on-farm feed production (usually forages and corn) has increased dramatically. Individual farms are questioning whether they should change feeding strategies. Deciding whether or not to feed more corn silage is one of their major questions. A difficulty in addressing this question broadly is that feed prices vary locally and on-farm.

Corn Silage vs. Alfalfa Silage

- Lactation performance benefit to feeding 1/4th to 1/3rd of forage DM as corn silage
- Similar lactation performance for 1/3rd to 2/3rd of forage DM as corn silage
- Feeding 3/4^{ths} or more of forage DM as corn silage creates nutritional challenges
- High Corn & Low/Moderate SBM prices favor higher corn silage diets
- Low Corn & High SBM prices favor higher alfalfa silage diets
- Neither forage is favored when corn & SBM prices are both either high or low
- DM yield per acre advantage for corn silage over alfalfa silage the major factor