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!

	Forage NDF Content		
	40%	45%	50%
Diet NDF forage	% Diet Concentrate		
24%	40%	47%	52%
21%	48%	53%	58%
18%	55%	60%	64%

High IVNDFD →

Low IVNDFD →

	Forage NDF Content		
	40%	45%	50%
Diet NDF forage	lb. Concentrate DM		
24%	20	23.5	26
21%	24	26.5	29
18%	27.5	30	32

High IVNDFD →

Low IVNDFD →

Assumed 50 lb. DMI

	Forage NDF Content		
	40%	45%	50%
Diet NDF forage	Concentrate ($/cow/d)		
24%	$3.00	$3.53	$3.90
21%	$3.60	$3.98	$4.35
18%	$4.13	$4.50	$4.80

High IVNDFD →

Low IVNDFD →

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			
	1.4	1.5	1.6	1.7
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

	Equivalent CP Corn:SBM Mix
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
Beet Pulp
Citrus Pulp
Hominy
Molasses
Potato Byproducts
Soybean Hulls
Whey
Starch
Sugar
Candy

Plant Protein SBM Alternatives

Ingredient

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

NPN Alternatives

Breakeven Value[1]

UW Feedval4; August, 2008

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

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

Opportunity Value[1]

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

[1]Relative 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?

	n	Average	Min	Max
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

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 3/4ths 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