

Feeding Cows with High Feed Costs

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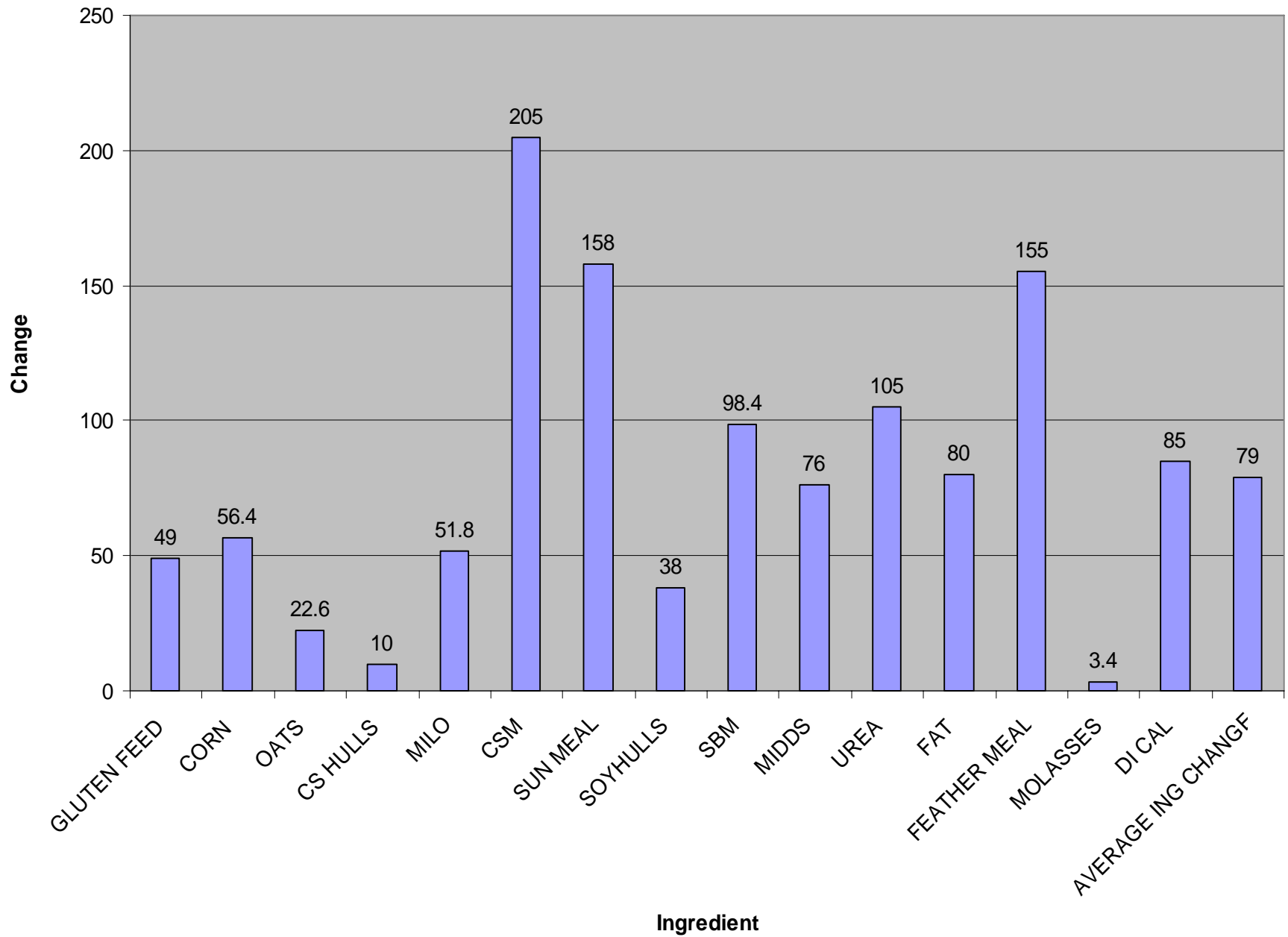
Summary

- Ingredient and ration cost
- Forage selection
- Ingredient selection

Ration Costs

- What has happened over the last 6 months
 - Most purchased feeds have increased in cost 50-100%
 - Corn has gone over \$5.00/bu...9cents a lb
 - > \$180 a ton or about what you paid for SBM last year
 - Hay prices have increased from < \$0.75 a RFV pt to some weeks \$1.25 a RFV pt

Cost Change Sept 07 to Feb 08



Ration Costs

- Why are they so high...lots of reason
 - Weak dollar
 - China's growing economy
 - Ethanol using more corn
 - Biodiesel using fat
 - Less hay, soybean and cotton acres
 - Lack of wheat in the world
- So now what?

Forage Selection

- Which is cheaper to grow and feed corn silage or haylage?
 - We have both expensive corn and protein costs
 - Silage \$35-45 a ton???
 - Hlg \$50-60 a ton???
 - Expensive fertilizer costs

Forage Selection

- Which is cheaper to grow and feed corn silage or haylage?
 - **CORN SILAGE**
 - Energy is more expensive to buy than protein, thus grow your energy on the farm
 - Get more tons per acre
 - Even with \$360/ton for SBM, \$5.00 a bu corn makes silage the cheapest forage to grow and feed to cows

Forage Selection

- What type of silage do you grow?
 - Depends on how you look at it
 - Pure paper economics or by what the cow needs to make milk
 - Economics
 - Get as much grain in the corn as possible to cut down on corn use and maximize yield
 - Cow and milk
 - Get good NDFd in the silage and get your energy for milk production from fiber

Forage Selection

- Economics
 - If you are lacking grain/starch in the silage then you have to purchase it or add it to the ration in the form of fat and corn
 - Milk per ton-linked with corn yield
 - Maximize yield
 - Grain makes up 50% of the weight of silage
 - Milk per acre
 - Issue with this is does it make milk?
 - Caution as it would point you down the road of growing field corn with low digestibility

Forage Selection

- Milk and Cow needs
 - Maximize NDFd in the corn silage
 - Low lignin or high digestible silages
 - Increased energy value in the silage by increasing fiber digestion
 - NDFd variation can make a 30 % starch silage go from a .74 Nel to a .66 Nel
 - Starch or grain yield may be sacrificed along with tons per acre

Forage Selection

- Value of silage went from \$25 to \$40 a ton, Hlg from \$45 to \$55 a ton
 - Harvest at the correct moisture for your facility
 - DON'T harvest later to increase starch or tons in silage
 - What you gain in the field will not cover what will lose in milk
 - Reduce shrink
 - Inoculate, pack, cover with 2 layers of plastic
 - 100 cow eating 40 lb silage @ \$25/ton = \$20075
 - 100 cow eating 40 lb silage @ \$40/ton = \$32120
 - @ \$40/ton every 2% in shrink is 14.6 tons or \$584
 - Face only what you feed in 24 hrs
 - Do not cut excess plastic off piles or bunkers

Ingredient Selections

- Ration formulation
 - Know what each ingredient adds to the ration
 - Is the ration a best cost ration or is the nutritionists just hitting specs and not watching costs
 - Question what the cost of ingredients are, why they are in the ration, why it is being feed
 - Is there a cheaper alternative
 - Don't have a must have ingredient without a reason why

Ingredient Selections

- What ingredients do I purchase to feed the cows?
 - Remember you are buying nutrients for the cow and not just an ingredient
 - Energy
 - Carbohydrates/starch
 - Fat
 - Protein
 - Crude protein vs. metabolizable protein
 - Minerals and vitamins

Protein

- Cost are changing daily
 - SBM was \$180/ton now up to \$360/ton
 - DDG was \$80/ton now over \$160/ton
 - Roasted beans was \$320/ton now over \$500
 - Pork MBM was \$240/ton now over \$430/ton
- So what protein do I feed my cows?

Protein

- Do I buy on price per ton?
 - No look at cost/hd/d of a mix of cost per unit of protein and potential production
- Are you feeding too much protein?
 - MUNs is 12-14 and considered good or can I keep production and lower cost with a 10-12 MUN???
 - What is your rations % CP?
 - 18 %, 17 %, 16 %, less than 16 %
 - If it is >17 % you might be feeding too much and wasting \$
 - How is the ration formulated?
 - Metabolizable protein vs. crude protein

Crude Protein

- Crude protein is just that...crude
 - $N \% \text{ in a feed} \times 6.25 = \text{Crude protein}$
 - Does not tell us if the cow can use that protein
 - Does not tell us if we are meeting her requirements
 - Does not tell us if we are feeding too much or not enough
 - It is easy to overfeed and add unnecessary cost to the ration

Metabolizable Protein System

Metabolizable Protein System

Meeting the needs of

The Rumen

The Cow



Microbial Protein Production

 One source of MP is to grow it in the rumen

 Sugar and starch drive microbial protein production

“Bypass” (undegraded) Protein



Amount of “bypass” protein dependent on

Rate of degradation in the rumen

Passage rate

Dry matter intake

Body capacity

Digestibility in the small intestine

MP Requirements



Requirements set by:

Milk Production

Milk Protein %

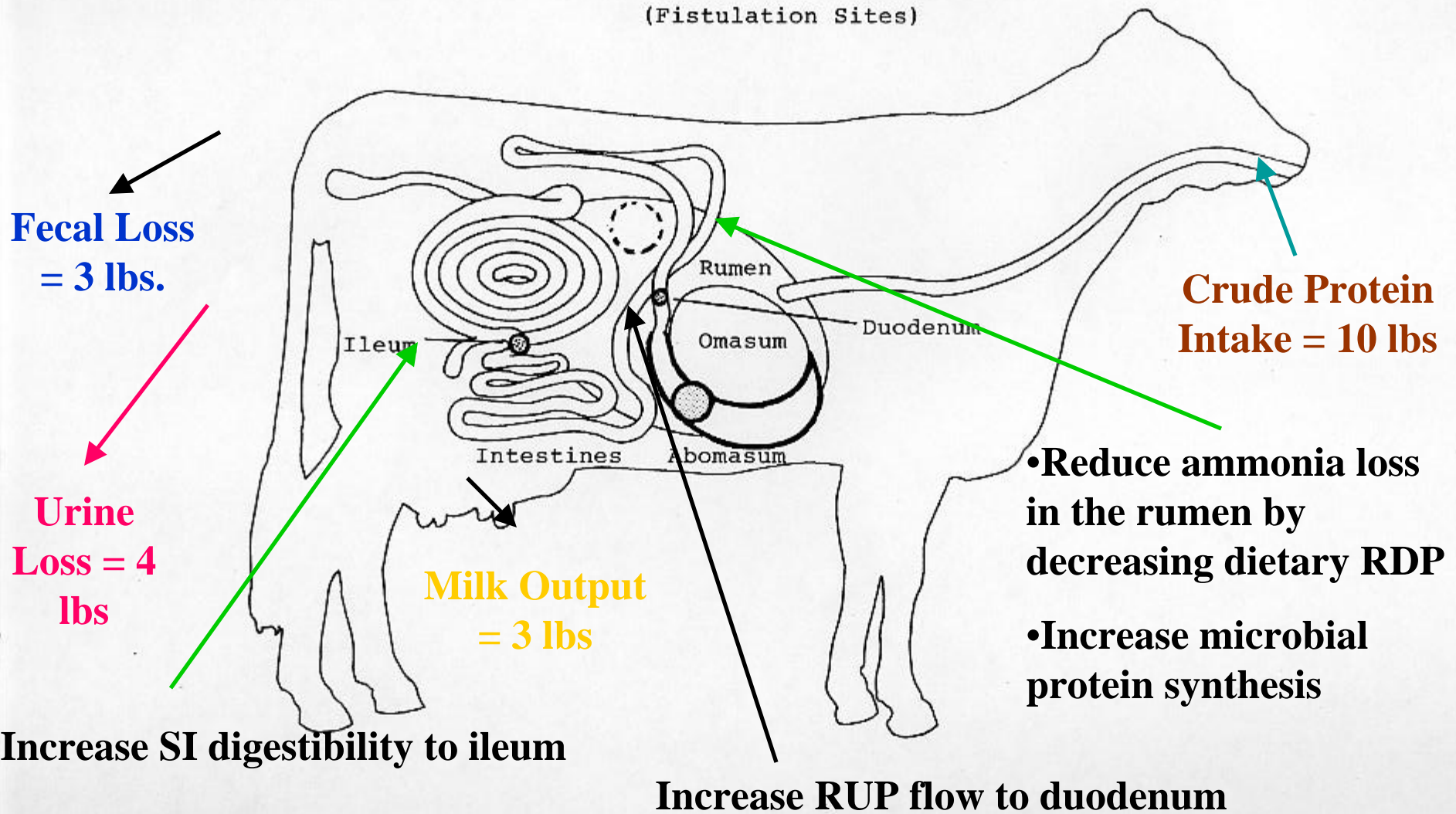
Days Pregnant

Lactation Number (parity)

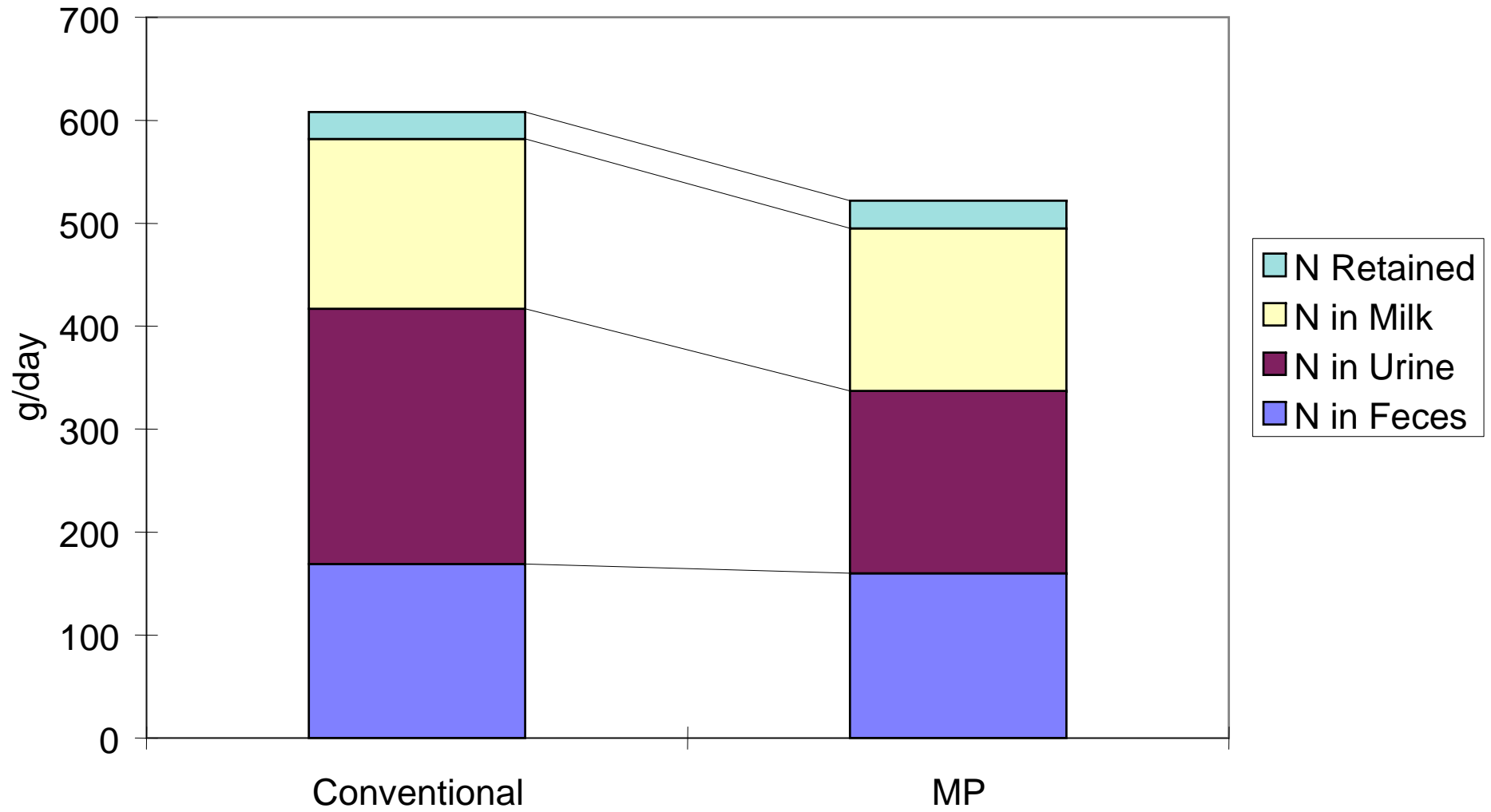
How can we improve the efficiency of converting dietary protein to milk protein?

DIGESTIVE TRACT OF THE RUMINANT

(Fistulation Sites)



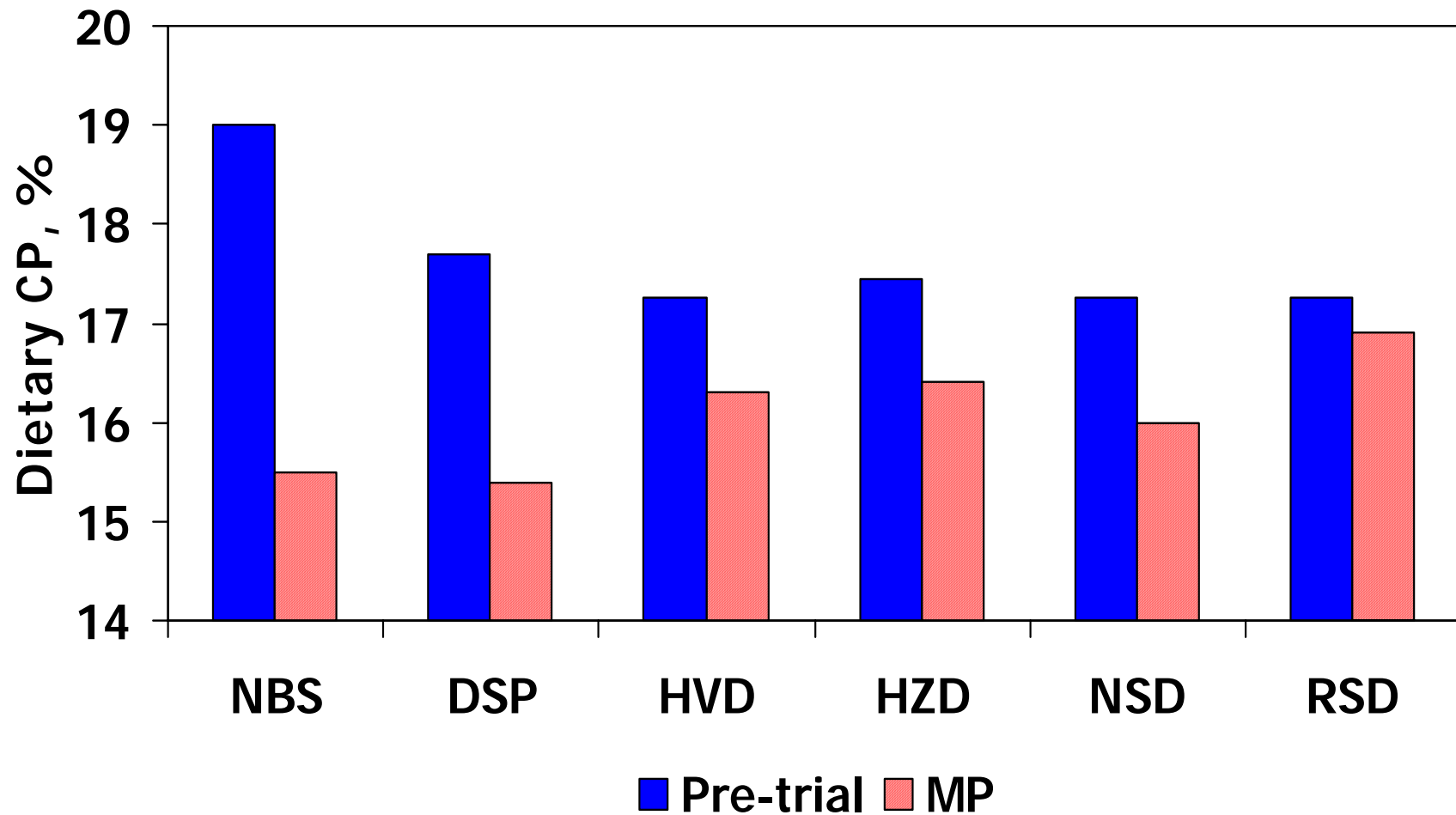
Feeding to MP Req - Effects on N Metabolism 4 Study Summary (DCM #64, #68, #76, #77)



How it Works...

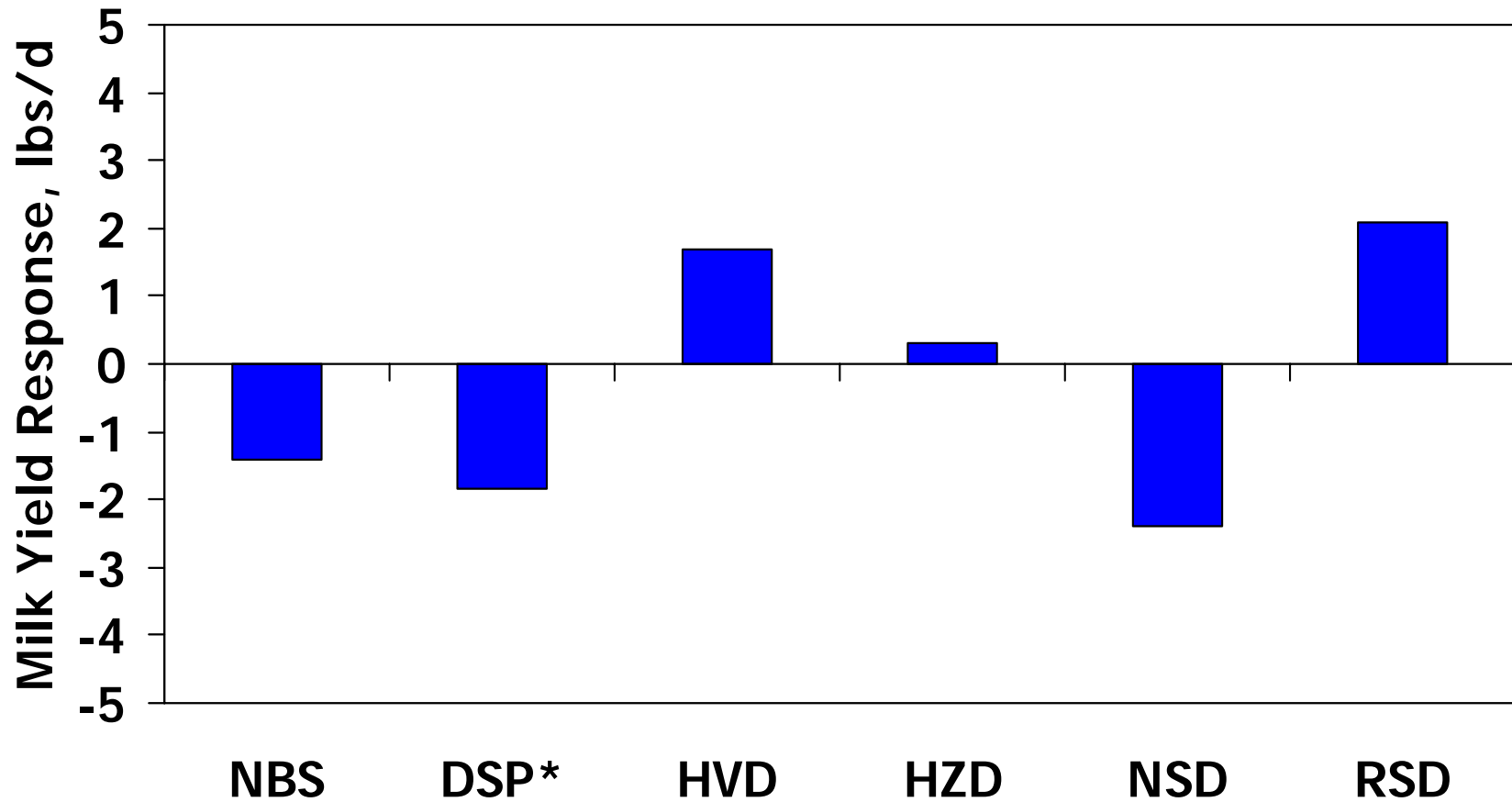
Field Trials

CP Content of Diets



Field Trials

Milk Responses to MP Diets



*Not Corrected for DIM, Heat, or Day Length, Trial started June 11

What ingredients provide MP?

- Forages
- Grain
- Byproducts

Forages: MP Comparison

Feed	CP %DM	MP %DM
Haylage Bud	22.0	7.31
Haylage. Early	18.0	6.40
Corn Silage	7.6	4.74

Forage Effects



Corn Silage vs. Haylage

Relative to haylage, corn silage has:

Lower CP (-MP)

Lower MP (% of DM)

Higher MP (% of CP)

Likely to need less CP in ration for same MP

Grains: MP Comparison

Feed	CP %DM	MP %DM	MP %CP
HMSC	9.74	10.7	110%
Distillers			
48% Soy			
SurePro			
Blood Meal			

Grains: MP Comparison

Feed	CP %DM	MP %DM	MP %CP
HMSC	9.74	10.7	110%
Distillers	28.6	21.3	75%
48% Soy			
SurePro			
Blood Meal			

Grains: MP Comparison

Feed	CP %DM	MP %DM	MP %CP
HMSC	9.74	10.7	110%
Distillers	28.6	21.3	75%
48% Soy	54.0	31.9	59%
SurePro			
Blood Meal			

Grains: MP Comparison

Feed	CP %DM	MP %DM	MP %CP
HMSC	9.74	10.7	110%
Distillers	28.6	21.3	75%
48% Soy	54.0	31.9	59%
SurePro	55.0	49.5	90%
Blood Meal			

Grains: MP Comparison

Feed	CP %DM	MP %DM	MP %CP
HMSC	9.74	10.7	110%
Distillers	28.6	21.3	75%
48% Soy	54.0	31.9	59%
SurePro	55.0	49.5	90%
Blood Meal	98.3	83.9	85%

Metabolizable Protein

- MP was developed for today's type of market of high CP prices
 - Looking for any cheap CP source...but is that the best thing for milk production and profitability??
- Don't dump all the SBM and BM for DDG and urea
 - Look at the production goals...both milk and milk protein
 - Milk protein makes up ~ 70 % of the milk check
 - 40 ¢/pt
 - 10 ¢ savings in the ration that cost 0.05 units of milk protein decrease your portability 10 ¢

Ration comparisons

	Standard	Option 1	Option 2
Corn silage	42	42	42
Haylage	34	34	34
HMSC	14.4	14.4	14.4
Protein Suppl	14.5	14.4	14.4
Purch cost, \$/c/d			

Ration comparisons

	Standard	Option 1	Option 2
Corn silage	42	42	42
Haylage	34	34	34
HMSC	14.4	14.4	14.4
Protein Suppl	14.5	14.4	14.4
Purch cost, \$/c/d	3.49	3.01	2.75

Ration comparisons (#/cow/d)

	Standard	No RSB	No WCS
48% SBM	4.1		
Cotton	3		
Rst Beans	3		
Surepro	.8		
Soy Hulls			
Distillers			
Min/fat	3.6		

Ration comparisons (#/cow/d)

	Standard	No RSB	No WCS
48% SBM	4.1	.9	
Cotton	3	3	
Rst Beans	3		
Surepro	.8	4	
Soy Hulls			
Distillers		2.9	
Min/fat	3.6	3.6	
Cost	\$3.49	\$3.01	

Ration comparisons (#/cow/d)

	Standard	No RSB	No WCS
48% SBM	4.1	.9	0
Cotton	3	3	0
Rst Beans	3		
Surepro	.8	4	4.4
Soy Hulls			1.8
Distillers		2.9	5
Min/fat	3.6	3.6	3.6
Cost	\$3.49	\$3.01	\$2.75

Ration comparisons

	Standard	No RSB	No WCS
NEI, Mcal/#	.78	.78	.78
MP, %	11.8	11.8	11.8

Ration comparisons

	Standard	No RSB	No WCS
NEI, Mcal/#	.78	.78	.78
MP,%	11.8	11.8	11.8
CP,%	17.9	17.0	16.4
RUP,%	32%	39%	40%

Metabolizable Protein

- What protein sources you feed depends on the costs and desired production levels
 - Currently DDG, Bypass SBM, Pork MBM
 - Not feeding SBM or much Blood meal
 - If looking for higher milk protein BM is needed
 - Look at lowering protein levels and increasing bypass protein to increase your profitability
 - Make sure nutritionist has requirements to do this
 - What about feeding protected urea?
 - Chances are you are overfeeding protein if you add it in place of SBM and production remains

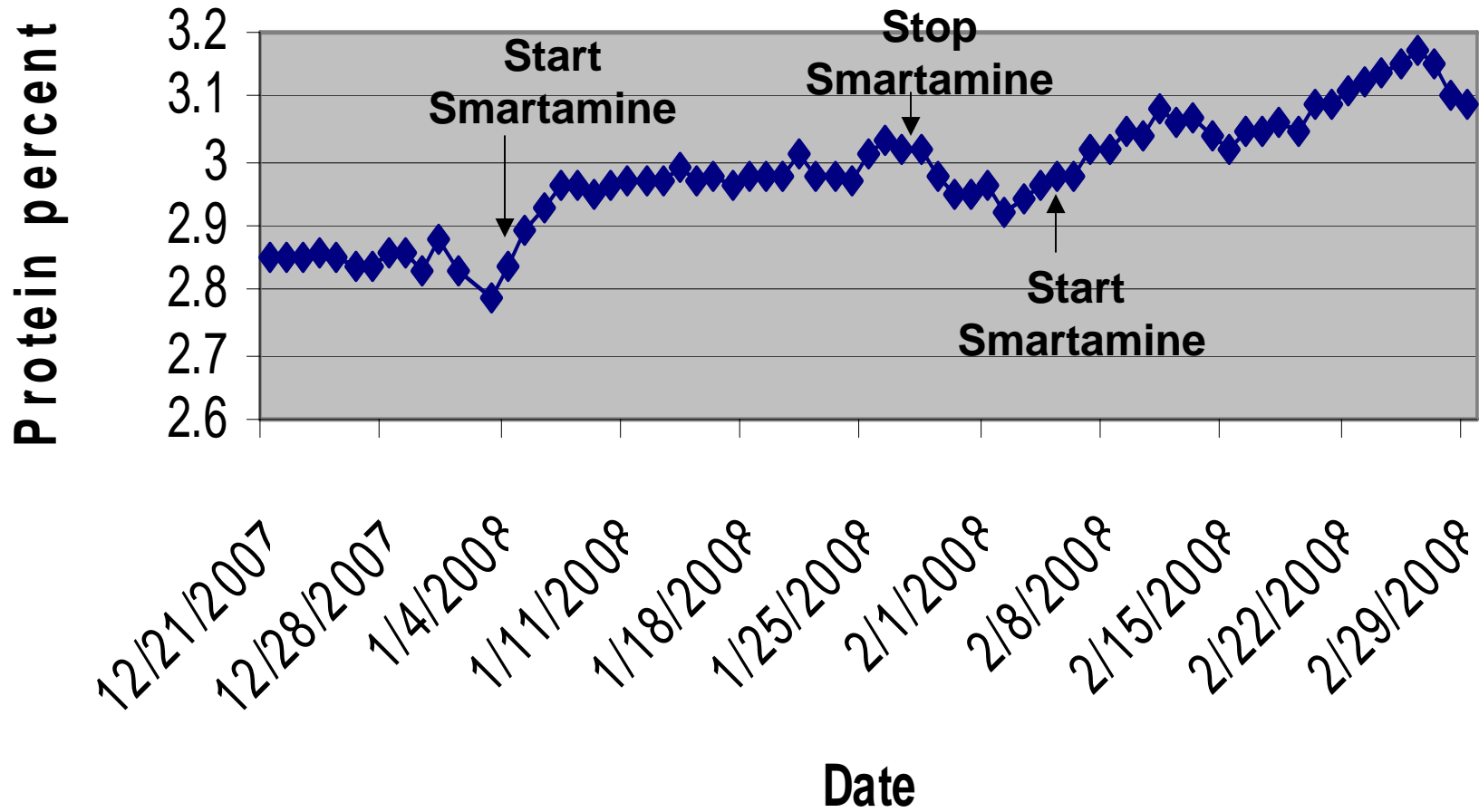
Metabolizable Protein

- What if the ration is MP and I see nothing?
 - Good if you are lowering CP and cutting cost
 - If you see nothing and you went up in MP I look at 2 items
 - Feeding too much MP to start with
 - If we were over feeding CP and MP then increasing it will not get you more milk
 - Look at decreasing the MP and CP ..or....
 - No response indicated a lack of energy to support more production
 - Increase energy density in the ration

Milk protein

- Milk protein is worth > \$4/pound
- Improving milk protein is next step in Metabolizable protein
- Ratio of Lysine:Methionine
- Requires use of synthetic methionine

Milk Protein



Milk protein

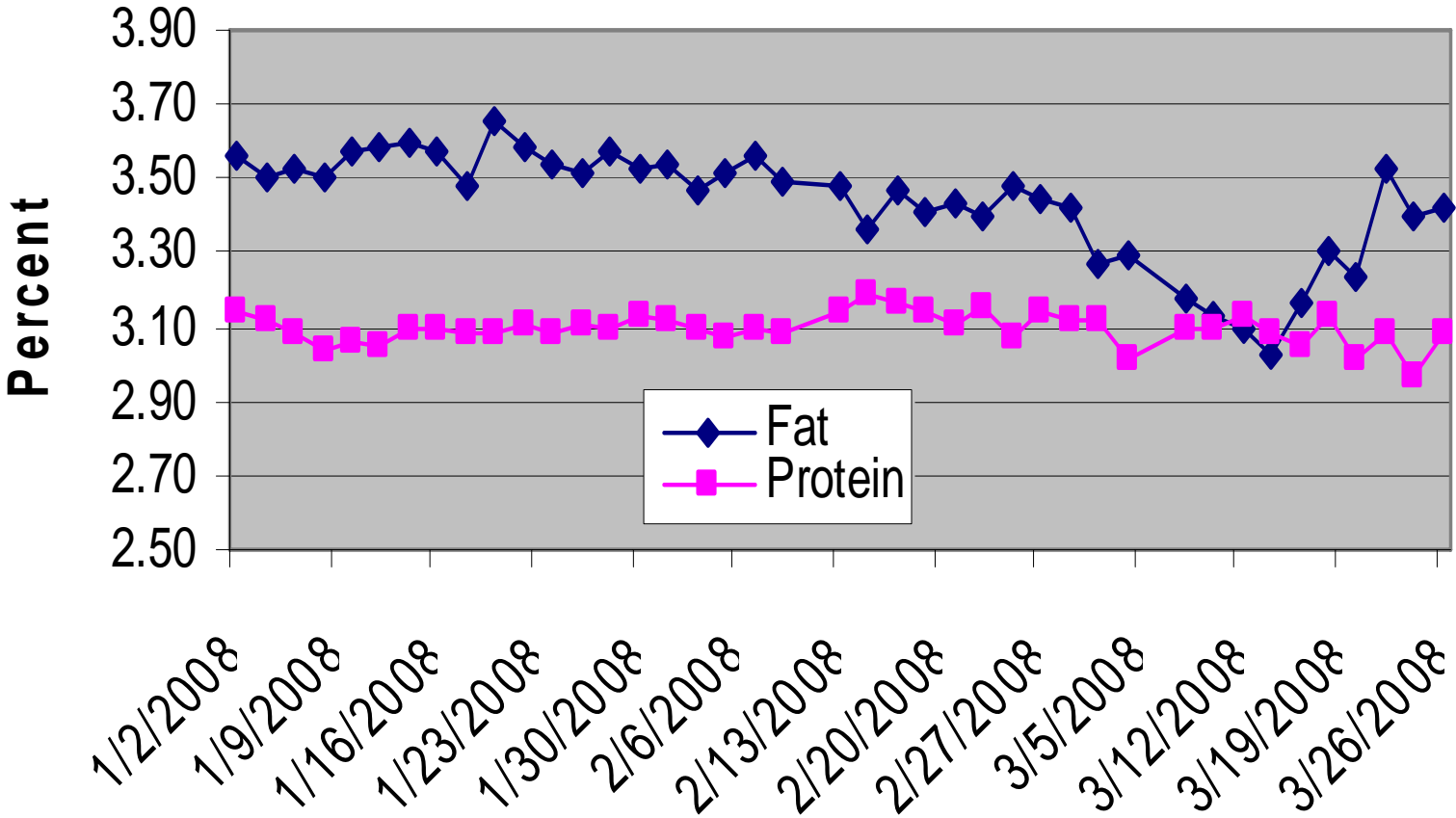
- Requires high quality lysine sources
 - Blood meal
 - Surepro/Soypass
- Requires methionine sources
 - Corn gluten meal
 - Smartamine
 - Mepron
 - Metasmart

Milk protein

- Investment
 - Smartamine - \$.12-\$.18/cow/day
- Return
 - Increase milk protein .1 unit
 - 80 # tank average will yield .08# protein
 - \$4.45/# milk protein = \$.35/cow/day

When is a good buy not a
good buy?

Effect of DDG source



Minerals and Vitamins

- Over feeding minerals increases costs and lowers the overall energy density of a ration
 - P requirements are 0.38-0.40 % /hd/d
 - See a lot of rations over 0.42 %...why?
 - Thought it increases repro but no supportive data
 - Dical costs over \$400 a ton and will be going up soon
 - Choosing ingredients with P in them can cut costs
 - DDG -0.76 % P
 - CGF -0.82 % P
 - Pork MBM - 4.73 %

Byproducts

- Byproducts can be a great way to lower feed costs
 - Select based on ration needs and costs
 - DDG- energy and protein
 - Fibrous byproducts like pulp, soyhulls and CGF can replace some forage and increase energy and NDFd in a ration
 - Cotton-fat and energy

Minerals and Vitamins

- Don't cut out trace minerals, chelated minerals, or vitamins to save cost now
 - They improve hoof health, immunity, lower SCC, increase repro, increase production, etc.
 - Most effects of lowering these nutrients are seen immediately but all lower profitability

Feed Additives

- Mycotoxin binders, Yeast, DFM, Stress Paks
- Justify why you are feeding them?
 - Do we still have mold
 - Is it enhancing fermentation
- Are they the best ones for your issue?
- Are they backed by data that shows they improve health or profitability?
- This is a good way to have profits nickled and dimed away

Summary

- With high feed costs forage selection and harvest is more important than ever
 - Reduce shrink
- In ingredient selection of rations look at what nutrients that ingredient add to the ration
- Look at feeding lower CP rations
- Evaluate Feed additives

Thank You

Questions?