

The Economics of Feeding Ruminants with High Priced Grains, Proteins, and Forages.

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Overview

- **In these economic times, “deals” are fewer and the cost saving smaller.**
- **Best forage plan may not be decided by basic ration costs.**
- **Decisions may be much different for those that buy forage versus those that do not.**

Typical costs by byproduct

	\$/ton	lbs	\$	lbs	\$	lbs	\$			lbs	\$
Corn sil		13		14.5		15.9		15.4		16.3	
Alf		13		14.4		15.9		15.4		16.3	
Corn	256	14.2	1.82	15	1.92	14.8	1.89	12.2	1.56	16.2	2.07
Dist	255	11.7	1.48								
Canola	348			7.2	1.25						
CGF	229							5	0.57		
SBM	454					4.9	1.11	3.4	0.77		
Blood	1010									2.7	1.36
total			3.30		3.17		3.00		2.90		3.43

Corn Silage versus Haylage

	lbs	\$	lbs	\$
Corn silage	10		22	
Haylage	20		11	
Corn	16.9	\$2.16	12	\$1.53
SBM	4.1	\$0.93	6.8	\$1.54
		\$3.09		\$3.07

Jan-Aug, 2012 Corn price \$7.20/bu, SBM \$454

Corn silage versus Alfalfa

- Most of time energy versus protein in balance with each other.
- Difference between feed cost per head and return per acre.
- Recent UW spreadsheet, suggests higher return/acre for corn silage, up to \$548/acre.
- Feed cost/head/day most likely not the primary consideration.
- Knowing forage cost of production critical

www.uwex.edu/ces/farmteam/

Corn Silage versus Haylage

- Bottom line is cows will milk on high quality forage.
- Agronomic decisions may outweigh feed costs.
- Nutrient management

Alfalfa

What is the most important part of alfalfa quality.

1. Protein
2. Particle Length
3. Palatability
4. Energy?

Value of Protein in Alfalfa

	<u>lbs, dm</u>	<u>\$</u>	<u>lbs</u>	<u>\$</u>
Corn Silage	14.5		14.5	
18 CP, 125 RFV	14.5			
22 CP, 125 RFV			14.5	
Corn	15.4	1.97	16.8	2.14
SBM	5.3	1.20	3.9	0.88
		\$2.87		\$3.02

In 2011 cost difference < 5 cents

Value of Energy In Alfalfa

	<u>lbs, dm</u>	<u>\$</u>	<u>lbs</u>	<u>\$</u>
Corn Silage	14.5		16.1	
18 CP, 125 RFV	14.5			
18 CP, 175 RFV			16.1	
Corn	15.4	1.97	12.3	1.57
SBM	5.3	1.20	4.9	1.11
		<u>\$3.17</u>		<u>\$2.68</u>

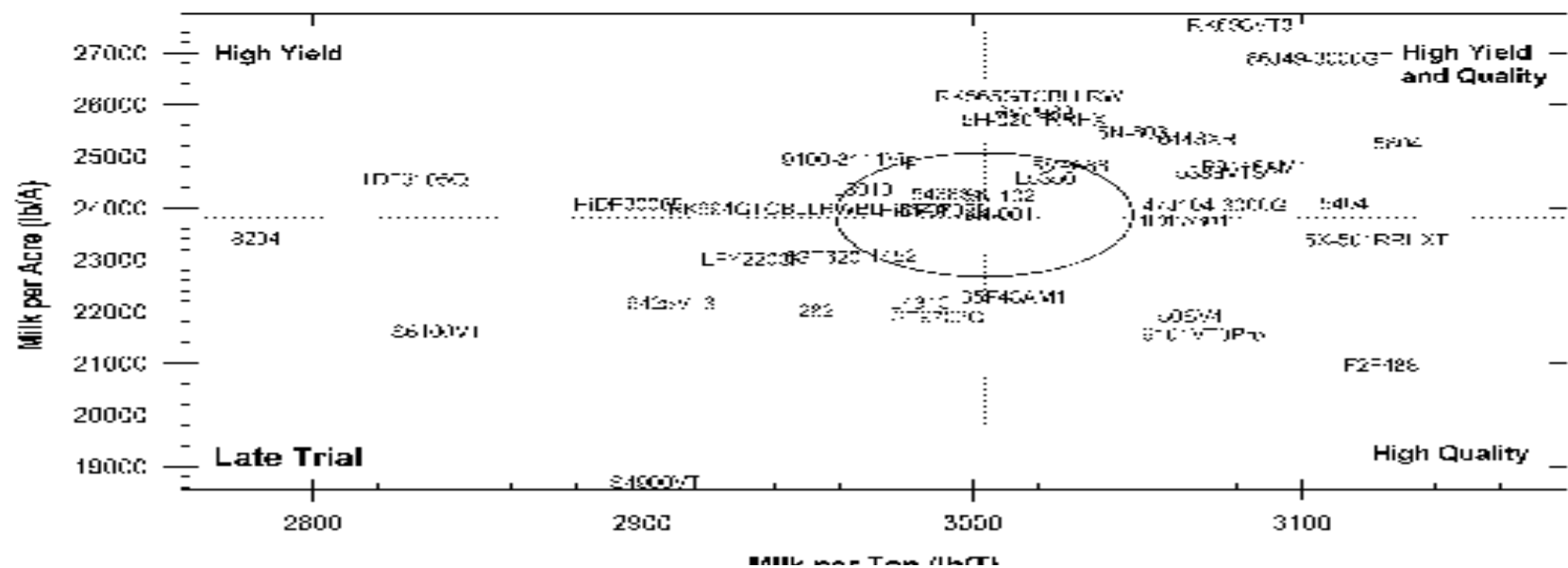
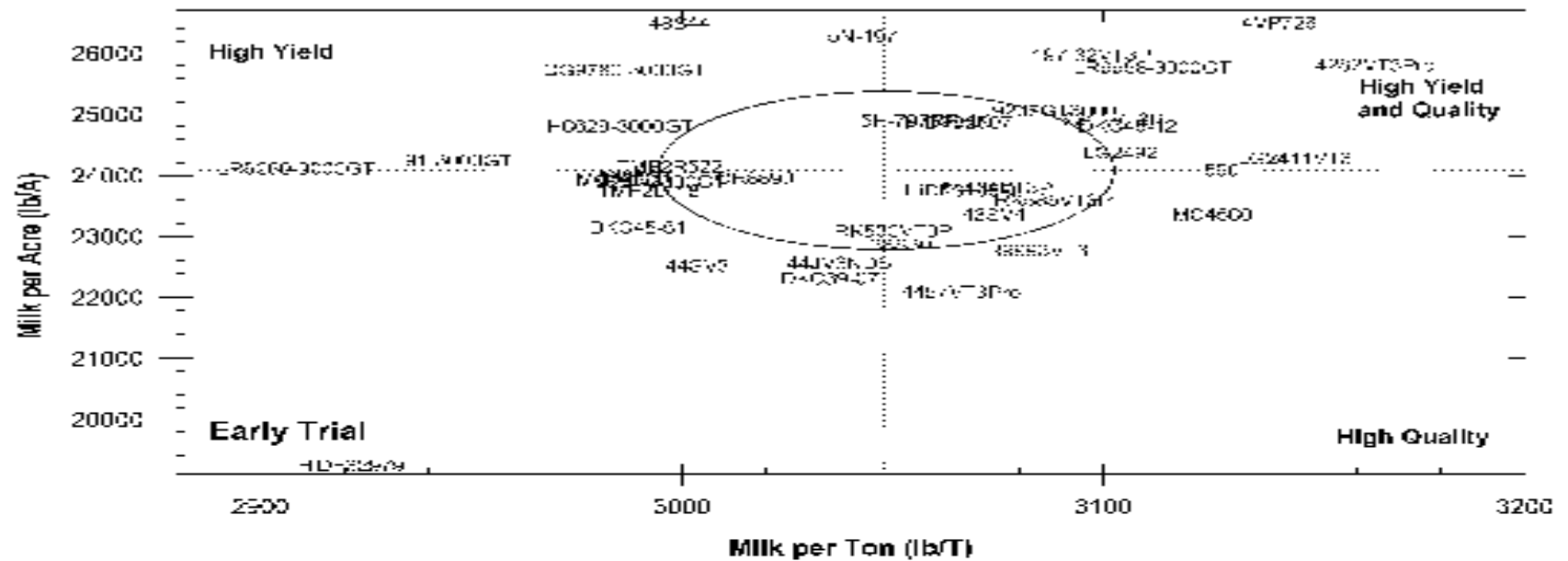
Alfalfa Considerations

- This is why you see alfalfa priced off RFV, or in reality energy.
- Fit in crop and nutrient management
- Its protein balances out corn protein
- Particle length might allow for more byproduct
- Quality less affected by DM and processing.
- You have control over alfalfa quality

Corn silage, what is important

- Tonnage
- Less trips over field
- Nutrient management
- Notion that it is more consistent than alfalfa
 - More dependant on DM and processing.
 - Improves with time in silo while alfalfa does not.
 - Mycotoxin

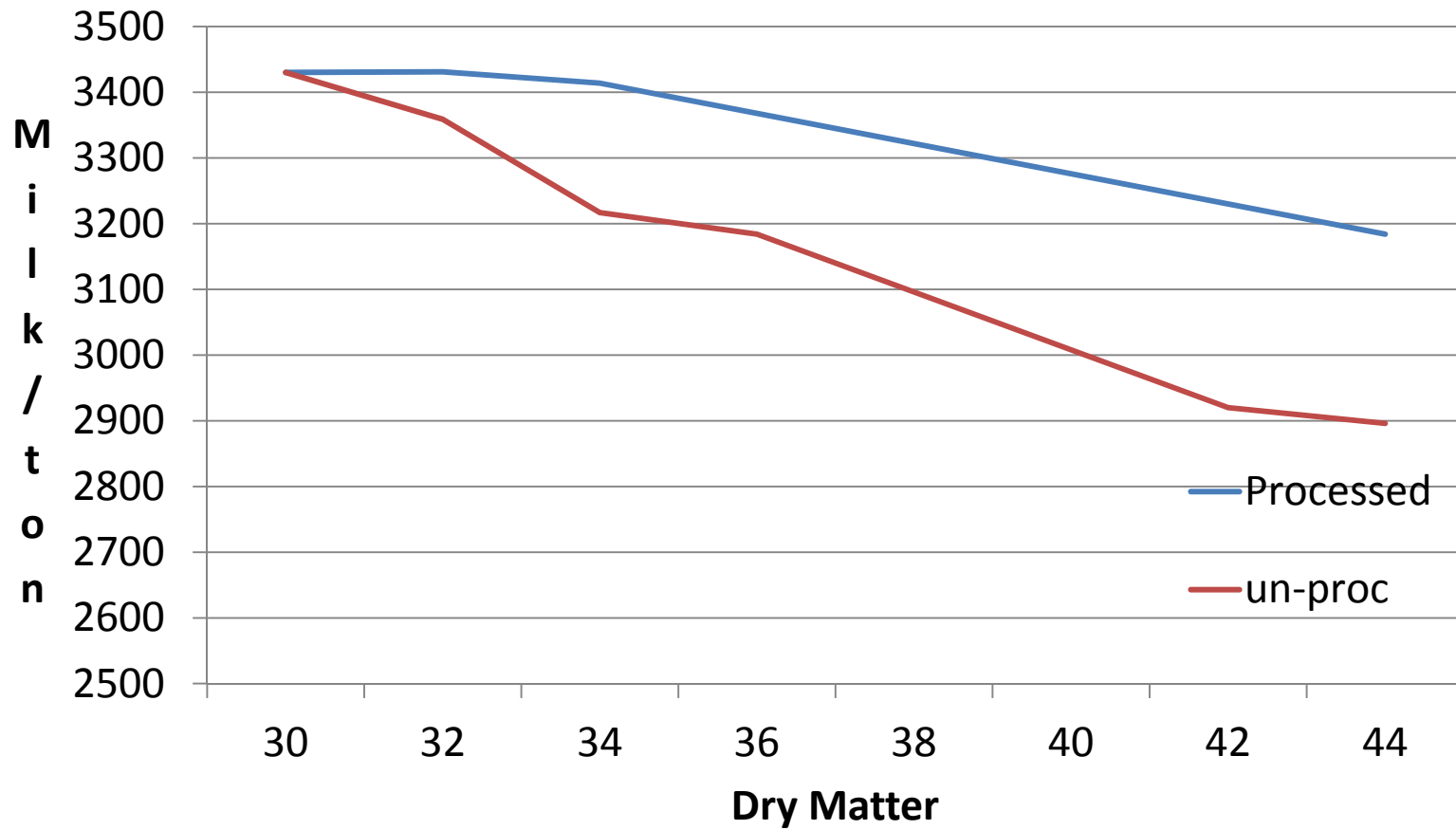
Figure 4. Relationship between Milk per Acre and Milk per Ton of corn hybrids in North Central Wisconsin during 2011



Corn silage In the Real World

- Corn silage made too dry
 - Dairyland labs 2011 64.9% DM 6.9LSD
2010 64.5% DM 6.9LSD
 - Too many poorly processed corn silages.
 - Generally does not milk as well fresh.
 - Have very little control over chemical composition other than cutting height.

Milk/ton versus DM



What does milk per ton really mean

- 200 lbs milk x \$18 milk is \$36/ton corn silage
- 200 lbs milk x .35mcal / .92 mcal in corn=\$10/ton corn silage.
- That means the corn silage you paid \$60/ as fed ton for went from \$170/ton DM to \$200/ton DM, or \$.20-.25/head/day

Cost of lower milk/ton

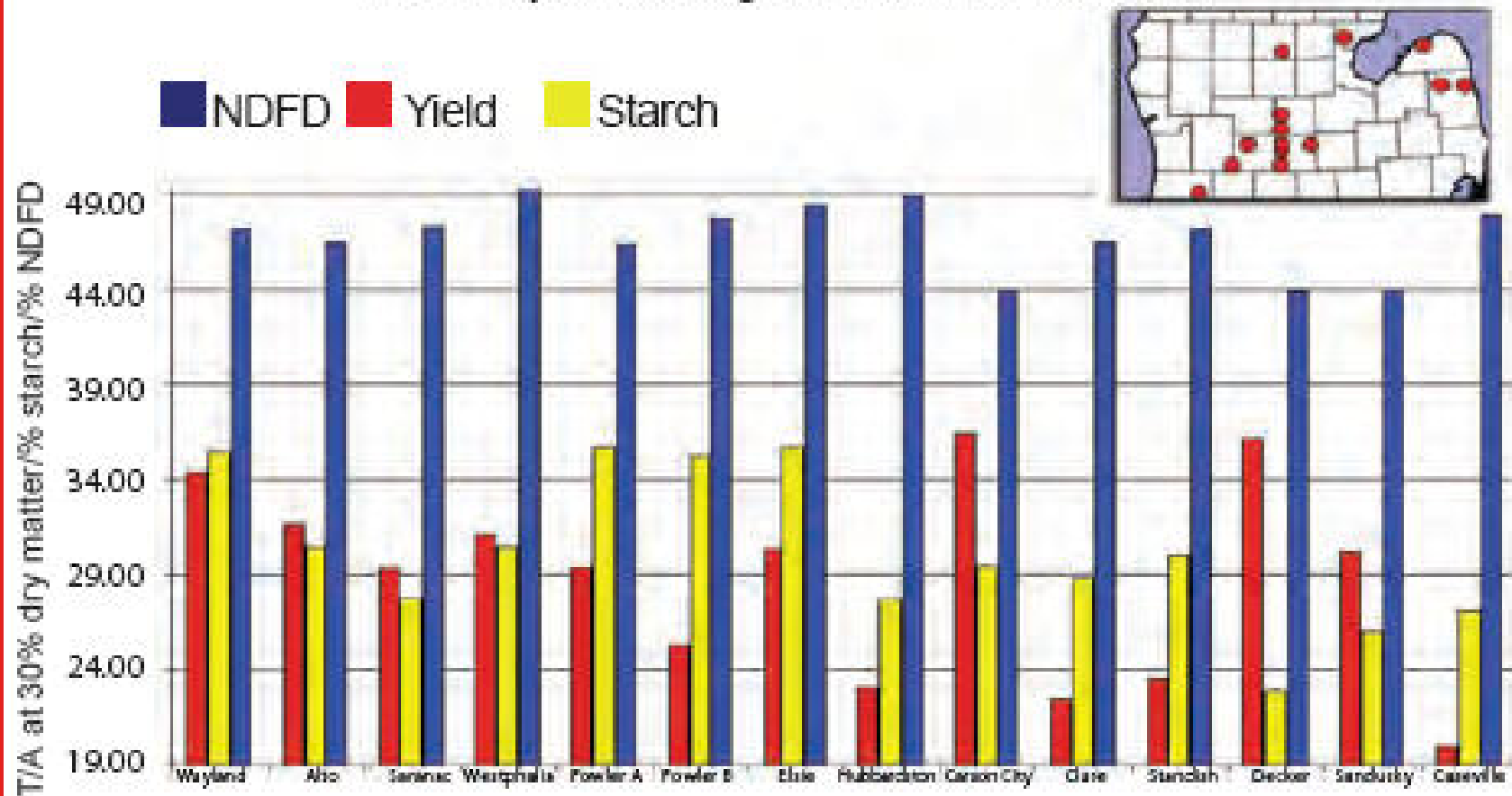
	<u>lbs, dm</u>	<u>\$</u>	<u>lbs</u>	<u>\$</u>
3200 milk/ton	16.1			
3000 milk/ton			15.1	
22cp, 125 RFV	16.1		15.1	
Corn	12.3	1.57	14.3	1.83
SBM	6.9	1.56	7.2	1.63
		<u>\$3.13</u>		<u>\$3.46</u>

Bottom line is cost reality is worse

Corn Silage Variation

Bill Mahanna

1. Yield, starch content and 24-hour NDFD of the same hybrid grown in multiple Michigan locations in 2009



Influences on corn silage

- Less than half of variation in corn silage digestible energy due to genetics(non-bmr).
- Do not assume words like soft kernel, digestible starch, etc., will compensate for poor management. They do not.
- Have one shot to get corn silage right.

Pricing Ingredients

- Feedval commonly used to price ingredients against standard prices.
- It can be deceiving, always look at job you want ingredient to do.
- It prices all feeds off reference feeds, Blood meal, urea, corn, tallow. Feedval 2012 prices off nutrients.
- Most think of feed value in context of just purchased costs.

Feedval price

	Actual cost, \$	Calculated \$	Value
Distillers	255	350	73%
Canola	348	319	103%
SBM	454	451	101%
Blood	1010	933	108%

Typical costs by byproduct

	lbs	\$	lbs	\$	lbs	\$	lbs	\$
Corn sil	13		14.5		15.9		16.3	
Alf	13		14.4		15.9		16.3	
Corn	14.2	1.82	15	1.92	14.8	1.89	16.2	2.07
Dist	11.7	1.48						
Canola			7.2	1.25				
SBM					4.9	1.11		
Blood							2.7	1.36
total		3.30		3.17		3.00		3.43

Byproduct Actual Cost

	lbs	\$	lbs	\$.
Forage	31.8		26		
Corn	14.8	1.89	14.2	1.82	
SBM	4.9	1.11			
Dist			11.7	1.48	
		3.00		3.30	

\$0.30 reduces forage by 5.8 lbs, meaning distillers actually costs \$103/ton

By-product Composition

%	Alfalfa	C.S.	Corn	Dist	Gluten Feed	Malt spouts	Cotton seed	Citrus	Soyhulls
CP	20	6-9	6-9	30	20-22	18-20	18-20	7-8	11-13
ADF	30-40	20-30	3-5	18	10-12	20	40	16	44
NDF	40-50	32-44	8-10	30	36	40	50	24	60
Starch	0	Lo 20- hi 30	65-70	<5	15-20	6-15	0	15-20	0

Byproduct considerations

- Greater availability of lower starch versus higher starch byproducts, favors corn silage.
- Other than cottonseed, they do not provide effective fiber, favors proper forage particle length.
- Offer a degree of ration stabilization.
- Watch for windows of contract options.
- Are we having a shift from focusing on growing forage to growing grain.

- Cows do not have a strict requirement for starch, but rather energy.
- Fermentable carbohydrate is really what matters.

Targeted Byproduct Usage

	lbs	\$	lbs	\$	lbs	\$
Haylage	16		16.5		13.5	
Corn Sil	16		13.2		16.8	
Corn	14.8	1.89	15.4	1.97	13.7	1.75
SBM	4.9	1.11	3.0	0.68	3.8	0.86
Dist			3.6	0.45	3.7	0.47
		3.00		3.10		3.08

Distillers has net cost of \$55/ton when replacing corn silage or \$45/ton when replacing haylage.

Bottom Line

	lbs	\$	lbs	\$
3200 milk/ton	17			
23 CP 175 RFV	17			
3000 milk/ton			13.7	
18 CP 125 RFV 16.1			13.7	
Corn	12.8	1.63	17.1	2.18
SBM	4.6	1.04	7.5	1.70
		\$2.67		\$3.88

Or, \$1.21 lowered forage fed by 6.6 pounds, but that dry matter still cost \$366/ton dry matter