

# What is the Real Value of an Ingredient



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## Rations are Expensive Dairy Ration Nutrient Costs - Central Ohio

Nutrient	Apr-2007	Apr-2008	Aug-2008
	-- Nutrient costs, \$/cow/day --		
NE <sub>L</sub>	2.93	5.13	5.69
MP	0.77	1.36	1.12
ne-NDF	-0.24	-0.43	-0.74
e-NDF	0.02	0.14	0.73
Minerals and vitamins	0.2	0.2	0.2
<b>TOTAL</b>	<b>3.68</b>	<b>6.40</b>	<b>7.00</b>

St-Pierre, 2008  
<http://dairy.osu.edu/bdnews/v009iss04.htm#CostofNutrients>



## Ration Costs

- Easy to make a cheap ration!
  - Almond hulls
  - Citrus waste
  - Straw
  - Rice hulls
  - Sand!
- But will the cows milk on it?
- Optimize Ration Costs
  - Maximize income over feed cost (IOFC)



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## Optimize Feed Costs

- What feeds provide the best value?
  - Cheap  $\neq$  Best Value
- How do we determine Best Value?
- Least Cost Formulation
  - Not always used
  - It should be your best friend!



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## Least Cost Ration Formulation Programs

- Brill
- Dalex
- Format
- CPM Dairy
- Others



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## Consider all Possible Ingredients

Let the Software decide what is best

- Offer up all feasible ingredients
  - Can the cow safely consume them
- Include current prices
- Make sure nutrient profiles are current
- Avoid restricting ingredient use
  - Limited quantity
  - Palatability



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# Example Least Cost Solution Shadow Costs

Balanced to meet all nutrient requirements for 35 kg Milk/d

## RATION SUMMARY

Ingredient	As Fed Level	Drv Level	Cost	Cost/Ton
Corn Silage, Dent	35.00	11.55	0.96	55.00
Corn, Fine Gr.	17.04	14.66	1.36	160.00
Beet Pulp, Gr.	9.50	8.64	1.19	250.00
Alfalfa Hay, Erly	9.23	8.30	0.92	200.00
Soybean Meal 48	5.95	5.21	1.34	450.00
Animal Fat	0.65	0.64	0.18	550.00
Dicalcium Phos	0.38	0.37	0.09	450.00
Salt	0.24	0.23	0.01	50.00
Generic VTM Pak	0.04	0.04	0.10	5000.00
<b>TOTAL</b>	<b>78.03</b>	<b>49.64</b>	<b>6.15</b>	<b>157.33</b>

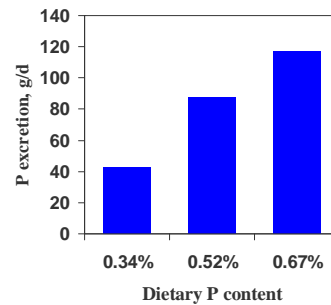
## REJECTED INGREDIENTS

	Shadow	Cost
Dairy Phos Min	426.04	550.00
Selenium 200	2334.97	5000.00
Canola Meal	323.72	350.00
Meat Meal	565.57	650.00
Barley, Rolled	104.42	200.00
Wh. Cottonseed w/l	291.67	300.00
Corn, Steam Rolled	151.18	200.00
Corn Silage, Milk	34.74	45.00

# Precision

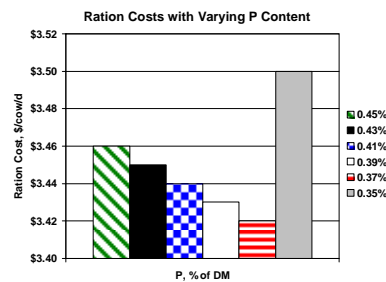
Don't Over-formulate

- Safety margin?
- Ingredient variation?



Balance to Requirements

- Balance energy for desired milk yield
- Don't over-formulate for any of the other nutrients
- But don't place maximums on nutrients either



# Evaluating Ingredients

## Dairy Ration Nutrient Costs - Central Ohio

Nutrient Name	Apr-2007	Apr-2008	Aug-2008
----- Nutrient Costs -----			
NE <sub>L</sub> , \$/MCal	0.088	0.154	0.171
MP, \$/lb	0.165	0.294	<b>0.242</b>
ne-NDF, \$/lb	-0.07	-0.126	-0.219
e-NDF, \$/lb	0.002	0.014	0.072

Use nutrient costs to estimate the value of an ingredient!

Value = 1500 MCal x .171 + 180 lbs MP x .242 ...

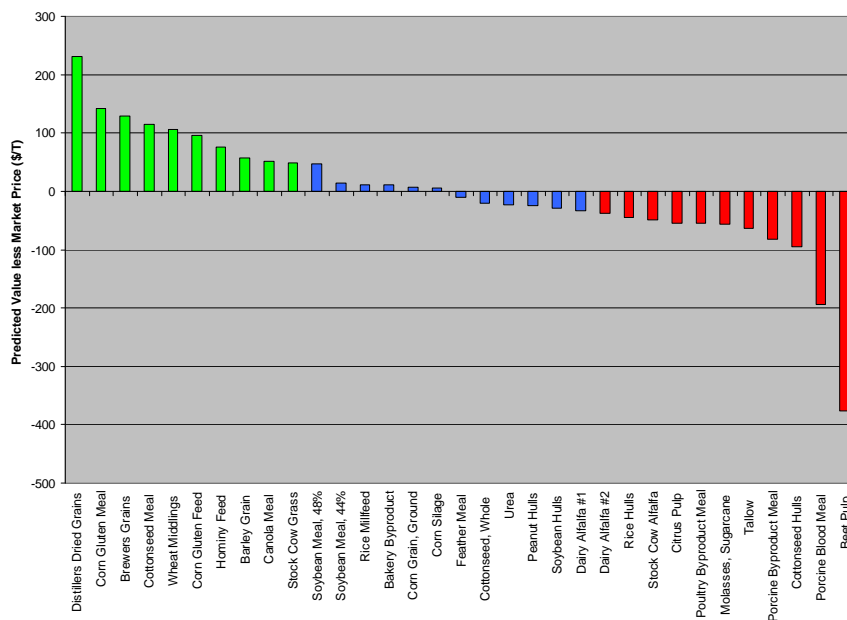
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Predicted Breakeven Price of Feedstuffs



# Conclusions

- There are opportunity ingredients just as before
- Pick good software and let it do its job
- Use the information from the system to select opportunity ingredients
- Monitor feeding programs and cow performance
- Unfortunately, the solutions are unique to each region

