

On The Road To Success With Good Dairy Nutrition



By Brian Hoffelt, B.S.

At Crystal Creek®, we are presented with herds that have many unique challenges ranging from low grain feeding to severe acidosis. Low grain feeding farms will often respond faster to our program because there is little damage to internal organs (rumen lining, liver)

from excessive grain intake. Severely acidotic herds may be more challenging because of the moderate to severe damage of the rumen lining and liver, both of which are necessary for the cow to efficiently produce milk. It is very important, when starting a producer on the Crystal Creek® Dairy Nutrition Model (CCDNM), for me to get all the current ration information so that I can assess the current status of a herd. This herd's initial

status will reflect the strategy implemented over the next weeks and months in order to correct the ration.

Last fall, I was approached by a producer with Brown Swiss Cattle in Eastern Wisconsin that was experiencing herd problems consistent with an acidotic ration. The cows were sorting, had reduced dry matter intakes (DMI), suppressed milk butterfat levels and poor animal health. This producer sent me his ration information and upon plugging in his current ration, my suspicions were confirmed. This was an extremely acidotic ration which was formulated for high production with no regard for animal health and rumen function.

Figure 1 shows this producer's previous ration, Step One Ration on the CCDNM and a ration 3 months into the project.

Figure 1: Total Ration Cost Comparison

Ingredient	Previous Ration		Step 1 CCDNM		3 Months on CCDNM	
	Amounts (lbs)	Cost/Head/Day	Amount (lbs)	Cost/Head/Day	Amount (lbs)	Cost/Head/Day
Corn Silage	70.77	\$1.78	72.00	\$1.79	72.00	\$1.79
Haylage			20.00	\$1.10	24.00	\$1.32
Mostly Grass Hay	2.00	\$0.20	2.00	\$0.20	4.00	\$0.40
Soybean Meal 48%	5.00	\$1.18	4.40	\$1.03	1.90	\$0.45
Wheat Grain	3.50	\$0.49	3.95	\$0.55	4.00	\$0.56
Corn Grain Ground	1.50	\$0.20	1.84	\$0.25	1.84	\$0.25
Expeller Meal	1.00	\$0.24	1.00	\$0.24	1.00	\$0.24
Calcium Carbonate	0.63	\$0.01	0.20	\$0.01	0.10	\$0.01
Bloodmeal	0.21	\$0.12	0.40	\$0.22	0.40	\$0.22
Salt	0.20	\$0.01	0.10	\$0.01	0.22	\$0.01
Optigen (Urea)	0.12	\$0.13	0.20	\$0.22	0.20	\$0.22
Magnesium Oxide	0.07	\$0.02			0.04	\$0.01
Diamond V Yeast	0.07	\$0.05				
VTM 1	0.15	\$0.06				
VTM 2	0.13	\$0.04				
VTM 3	0.06	\$0.15				
CC Pasture Min			0.50	\$0.38	0.50	\$0.38
Fuse 207			0.13	\$0.20	0.13	\$0.20
Wheat Straw	1.00	\$0.10				
Corn Gluten Feed	7.99	\$1.11				
Soybean Whole	1.01	\$0.25				
Sodium Bicarbonate	0.50	\$0.08	0.50	\$0.08		
Soybean Hulls	0.50	\$0.06				
Animal Fat	0.19	\$0.08				
Rumensin 10 gram	0.04	\$0.05	0.03	\$0.04		
Total Cost/Hd/Day		\$6.41		\$6.32		\$6.06

I have highlighted the ingredients to be removed over time from the ration. Ingredients highlighted in red can be detrimental to key rumen microbes and do not support optimal fiber digestion. At Crystal Creek®, when we analyze a ration we remove ingredients that impede forage digestion and rumen function. By taking a slow, methodical approach to the removal of counterproductive ingredients, most herds never see a slip in production. If they do slip a bit, we slow the process until the cows have rebounded from the previous change, allowing the cows to catch up.

With this ration the main issues were high starch level (28% Starch) combined with low fiber (16% ADF) level leading to acidosis. This is a very conventionally

minded ration that is not rumen friendly. This ration is geared toward concentrating the ration with starch, fat and rumen bypass nutrition. On top of this, Rumensin (an antibiotic geared toward the killing of cellulitic based rumen microbes) was fed at industry accepted levels to alter rumen function more toward starch fermentation and decreased fiber fermentation.

Over time, I was able to remove counterproductive ingredients to formulate a more sustainable ration. By removing these ingredients, we were able to get the cows to a point where we could focus more on creating a microbe friendly environment in the rumen.

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This herd is a work in progress, but we have gotten the cows turned around with increased components to a 4.4 BF and a 3.35 P, decreased feed costs of \$127.75 per cow annually, improved DMI from 50 to 55 lbs, improved heats/conception rates, lowered somatic cell count and improved herd health. This is after the first 3 months on the CCDNM. To get to where we want to be with this ration it could take over a year. As the cows tell us they are ready for the next ration upgrade, we will continue to do so.

This producer and I worked very closely during this transition to ensure that the cows moved smoothly forward on the CCDNM. Frequent, effective communication on topics such as manure consistency, DMI, body condition and any other herd observation is important to ensure a trouble free ration transition. When I get an update, I am able to make a ration adjustment and move the cows closer towards the producer's goals.

When we started this producer on the CCDNM, he had to understand that this was going to be a huge project. Acidotic cows can have varied levels of damage to internal organs and can be sensitive when a ration is adjusted. We took the time to plan out a sequence of ration strategies that would get the cows to the point where we could focus more on rumen function and improved DMI.

Because we took the time to make a slow transition the milk production level was maintained, feed costs were reduced and components, animal health, reproduction and herd profitability all improved. Now that we have removed undesirable ration ingredients and have

Figure 2: Total Ration Profitability

(65 lbs of Milk on Previous Ration and Crystal Creek®)

	Previous Ration	Crystal Creek	Profit Increase
Total Annual Ration Expenses:			
Total Ration Cost/Cow/Day	\$6.41	\$6.06	\$0.35
Total Ration Cost/110 Cows/Year	\$257,361.50	\$243,309.00	\$14,052.50
Increased Annual Profit/110 Cows			\$14,052.50
Increased Annual Profit/Cow			\$127.75

*Total Ration Profitability reflects annual profitability.

Note: All economic evaluations are based on projected annual estimates resulting from initial herd performance.

**Increased profit analysis does not take into consideration:

- 1) Reduced veterinary expenses
- 2) Improved fresh cow transition
- 3) Better utilization of feedstuffs in the diet
- 4) Better reproductive performance
- 5) Cow longevity

Figure 3: Herd Response

3 Months on Crystal Creek® Dairy Nutrition Model

	Previous Ration	Crystal Creek®
Milk Production	65	65
DMI (Dry Matter Intake)	50	55
Butterfat	3.6	4.4
Protein	3.1	3.35
MUN's	15	12
SCC (Average)	250,000	150,000
Manure Condition	Inconsistent	Consistent
Corn/Fiber in Manure	Yes	None
Cows Sorting Fiber	Yes	None
Acidosis	Yes	No
Foot Health	Average	Good
Heats	Average	Good
Reproduction	Average	Good

moved away from an acidotic ration, we are able to focus more on formulating a rumen friendly ration while continuing to improve DMI, production and profitability.

Whatever your current ration type, Crystal Creek® has the experience to implement a plan to make your farm more profitable. Call to talk to a qualified Crystal Creek® Nutritionist today!