

Maximize Profitability With Dairy Glow™



By Brian Hoffelt, B.S.

There are many supplements on the market designed to improve feed efficiency. Some commonly used products come with one or two beneficial aspects, but have many more negative side effects. Finding an alternative

to these products can prove difficult at times. Crystal Creek®'s Dairy Glow™ is a safe and proven alternative to many feed additives, without the undesirable negative side effects. Research, and on farm experience, tells us that feeding the ingredients found in Dairy Glow™ improves animal performance. Dairy Glow™ has been a proven part of the Crystal Creek® product line for many years and is based on solid industry and university research. Dairy Glow™ is a unique combination of high grade *Yucca schidigera*, polysaccharide chelate trace minerals, *Aspergillus oryzae*, yeasts and vitamins. This article will focus on the key features specifically associated with the *Yucca schidigera* component of Dairy Glow™ and why it is a valuable asset to dairy producers.

Specific Sourcing of High Grade, Functional *Yucca schidigera*¹

There are different techniques utilized in preparing *Yucca schidigera* for use in livestock feed. Comparative performance studies have been done to evaluate function of the fed *Yucca schidigera* from these different sources.

Yucca schidigera research has been available for over 30 years, but until recently the sourcing and manufacturing process has not been critically evaluated. New data shows that a specific manufacturing technique yields a high function *Yucca schidigera* containing anti-oxidants that persist well in the body.

The *Yucca schidigera* that Crystal Creek® utilizes in Dairy Glow™ is sourced from a manufacturing process that ensures a highly persistent anti-oxidant effect in cattle. Crystal Creek® continues to monitor this process for high concentration and function. Not all sources of *Yucca schidigera* have this high function, so ingredients need to be evaluated to ensure high performance.



Improved protein utilization in the rumen and enhanced microbial protein flow to intestine²

Protozoa in the rumen kill beneficial bacteria; the bacteria that are responsible for breaking down feedstuffs release nutrients to the cow. The type of *Yucca schidigera* present in Dairy Glow™ has been shown to effectively decrease protozoa levels in the rumen by up to 42% without lowering acetic acid levels in the rumen. Maintaining acetic acid levels in the rumen indicates that Dairy Glow™ supports fiber digestion. Herds feeding Dairy Glow™ typically have higher milk butterfat and protein levels.

Cows fed *Yucca schidigera* have increased rumen propionic acid levels. This indicates improved starch fermentation, while at the same time maintaining fiber fermentation. The result is better feed efficiency and more microbial protein produced for the cow to digest.

Feeding Dairy Glow™ supports higher levels of rumenal bacteria to digest/capture nitrogen typically



found in the cow's rumen. This leads to less wasted nitrogen leaving the rumen and being expelled into the blood or milk as Blood Urea Nitrogen (BUN's) or Milk Urea Nitrogen (MUN's). In addition, more bacteria present in the rumen leads to more microbial protein for the cow to digest. This improves overall efficiency in protein utilization by the cow and decreases out of pocket protein expense.

Reduced Risk of Liver Abscesses¹

Significant reductions in liver abscesses have been documented in cattle fed *Yucca schidigera*. Cattle fed moderate to high starch rations have the potential to get acidosis

on a sub-clinical and clinical level, especially if the cows are sorting feed. Cattle on the Crystal Creek® Dairy Nutrition Model are typically fed 22-26% starch rations, which are moderate starch feeding levels and typically out of an acidosis risk level. The *Yucca schidigera* in Dairy Glow™ supports

the liver and helps to prevent damage that can be done if cows are put into an acidotic situation.

Soothing Intestinal Support Leads to Better Nutrient Absorption³

A healthy, functioning intestinal tract is necessary to absorb nutrients needed by the cow for production. High production cattle are often fed nutrient dense rations. These rations can cause an irritation and trigger natural defense mechanisms in the intestine. When this occurs, the intestinal tract lining thickens and releases mucous to protect itself. Increased mucous production coats the intestine, reducing nutrient absorption in the intestinal tract and reducing feed efficiency.

The *Yucca schidigera* in Dairy Glow™ has been shown to affect this defense mechanism progression in two ways. First, it provides a soothing effect to the intestinal lining and reduces the need for mucous production. Second, Dairy Glow™ helps to clean out built up mucous around the intestinal villi, improving absorption of nutrients. Permeability of the intestinal mucosal cells improves and facilitates the uptake of nutrients. The overall effect is that the cow absorbs and utilizes a higher percentage of what is fed in the ration.

Enhanced Immune System Response³

The *Yucca schidigera* in Dairy Glow™ has been shown to produce an array of positive antigen-specific and nonspecific immune responses. Cattle fed *Yucca schidigera* have improved resistance to viral infections.

Improved Conception Rates³

High rumenal ammonia, leading to high BUN levels, can lead to low conception rates because of the negative impact that high BUN's have on ovary function. *Yucca schidigera* captures free nitrogen in the rumen before it can be absorbed into the blood. Then this nitrogen is carried to the intestinal tract where it is utilized as a by-pass protein source. This improves protein efficiency and helps to reduce protein and feed expenses. Because nitrogen in the rumen is more efficiently utilized when *Yucca schidigera* is fed, less ammonia is released into the bloodstream leading to lower BUN levels. Overall, ovary function improves in cows fed *Yucca schidigera* in Dairy Glow™.

(CONTINUED ON PAGE 14)

Improved Profitability Potential Realized

Dairy Glow™ can eliminate the need for other additives in the ration, resulting in additional cost savings which are listed in *Figure 1*. As rumenal efficiency improves there is also potential for improvements in milk production and components. *Figure 2* shows economic benchmarks which can be monitored to determine the point at which Dairy Glow™ begins to reach a break-even point, and starts to improve dairy herd profitability. It is possible to break even or decrease feed costs by replacing one or a combination of several ingredients with Dairy Glow™. If you had to make the choice to feed Dairy Glow™ based only on the data support for *Yucca schidigera*, the decision is easy. Add in all of the other solid nutrition included in the formula and you will see that Dairy Glow™ is of significant value. We keep the

same high quality standards when formulating Dairy Glow™ as we do in any Crystal Creek® product.

Dairy Glow™ also contains:

1. **Polysaccharide Chelate Trace Minerals:** 100% Bio-available Zinc, Copper and Manganese have exceptional data supporting use for reproduction, immune function, improved feed efficiency, milk production and foot health.
2. **Selenium Yeast:** Highly bio-available selenium source improves immune function, reproduction and animal health.
3. ***Aspergillus oryzae*:** Proven to aid in rumen fermentation of fiber.
4. **Functional Yeast:** Proven to support rumen micro-flora.
5. **Vitamin E:** Supportive to udder health and immune function.

No matter which way you look at the economics, Dairy Glow™ more than pays for itself. When counterproductive ingredients can be removed from the ration, so can extra costs. Once the cows are on Dairy Glow™ the stage is set for improvements in milk production, milk butterfat and milk protein. A combination of ration cost savings and improved production makes Dairy Glow™ an easy choice. Call and speak with a Crystal Creek® Nutritionist today to see how Dairy Glow™ can improve your herd's profitability.

1. Goodall, Feedstuffs, (October 17, 2011)
2. Hristov, et. al., J Anim Sci 1999, 77:2554-2563
3. P.R. Cheeke, (2001)

Figure 1:
EXAMPLE COSTS PER OPTIONAL INGREDIENT
(One or All Could Be Removed From Ration When Dairy Glow™ Is Fed)

INGREDIENT	COST/HEAD/DAY
Ionophores (Rumensin)	250 mg = \$0.03
Buffers (Sodium Bicarbonate)	8 oz = \$0.14
Probiotic (Commonly Used \$133/25 lb)	1/2 oz = \$0.17, 1 oz = \$0.34
Fat (Choice White Grease)	0.5 lb = \$0.21
Fat (Granular Bypass Fat)	0.35 lb = \$0.23
Supplemental Protein (Soy Plus \$480/ton) (Organic Roasted Soybeans \$1200/ton)	Soy Plus: 0.958 lb = \$0.23 Organic Roasted Soybeans 0.38 lb = \$0.23
Crystal Creek® Dairy Glow™	2 oz = \$0.23

Figure 2:
RESPONSE OPTIONS NEEDED TO BREAK EVEN WHEN FEEDING DAIRY GLOW™
2 oz/Head/Day = \$0.23/Head/Day

	CONVENTIONAL PRICE	ORGANIC PRICE
Milk Production Conventional: \$18.00/CWT Organic: \$26.55/CWT	1.28 lbs Milk = \$0.23	0.87 lbs Milk = \$0.23
Milk Butterfat Conventional: \$1.6639/lb Organic: \$2.09	Butterfat Increase 3.8 to 4.0127 on 65 lbs of Milk = 0.13822946 lb BF = \$0.23	Butterfat Increase 3.8 to 3.97 on 65 lbs of Milk = 0.110047846 lb BF = \$0.23
Milk Protein Conventional \$3.4109/lb Organic: \$2.09	Protein Increase 3.0 to 3.104 on 65 lbs of Milk = 0.067430883 lb P = \$0.23	Protein Increase 3.0 to 3.17 on 65 lbs of Milk = 0.110047846 lb P = \$0.23
Decreased Ration Supplemental Protein Conventional: Soy Plus \$480/ton Organic: Roasted Soybeans \$1200/ton	Decrease Soy Plus Feeding Rate by 0.958 lbs = \$0.23	Decrease Roasted Soybean Feeding Rate by 0.383 lbs = \$0.23



APRIL 2014 SPECIALS!

- PIVOT FL™**
- 1-3 boxes: \$10/box discount**
 - 4-9 boxes: \$18/box discount** (\$10/box discount + \$8 per box existing volume discount)
 - 10+ boxes: \$23/box discount** (\$10/box discount + \$13 per box existing volume discount)
 - Pail: \$2/pail discount**



AND HEIFER PRIDE™ \$10/bag discount & \$2/pail discount



MAY 2014 SPECIAL! JAM PROMOTION

Receive a **FREE Jar of Jam** or **4 oz. Udder Fancy™** for every \$100 of product purchased. Limit 5 per order.

JUNE 2014 SPECIALS!

- NO-FLY™**
- \$5 per gallon discount** (4 gallons or more)
 - \$2 per gallon discount** (2-3 gallons)
 - Normal discounts do not apply during promotion.*



AND

- CRYSTAL ADVANTAGE® EQUINE FLY REPELLENT**
- Concentrate: \$4 per bottle discount**
 - Ready-To-Use: \$2 per bottle discount**



JULY 2014 SPECIAL!

WOUND SPRAY™ Save 10%

AUGUST 2014 SPECIAL!

VETERINARY DAIRY LINIMENT™
Save 10% IN ADDITION TO Normal Volume Discounts!

