

## Features and Benefits of Dakota Gold DDGS for Dairy Formulations

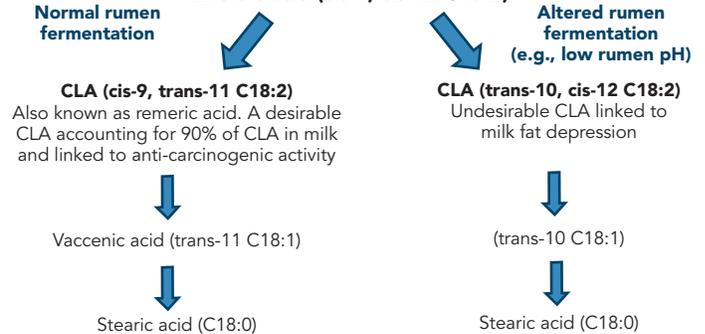
Dakota Gold’s unique nutrient profile makes it a perfect ingredient for dairy cattle formulations. The following list includes a few key features that provide value to both dairy producers and nutritionists.

### Reduced Fat

Feeding greater amounts of fat in the diet of lactating dairy cattle—specifically unsaturated fat like that in corn oil—can result in cows producing less fat in the milk, called milkfat depression.

**Because of the BPX process that POET uses to produce bioethanol and Dakota Gold, POET can extract more oil than other bioethanol producers. The lower fat in DDGS provides a significant advantage over other non-POET DDGS for dairy cattle.**

### BIOHYDROGENATION PATHWAYS OF TRANS-FATTY ACID INTERMEDIATE PRODUCTION LINKED TO MILKFAT DEPRESSION (ADAPTED FROM LOCK, 2009)

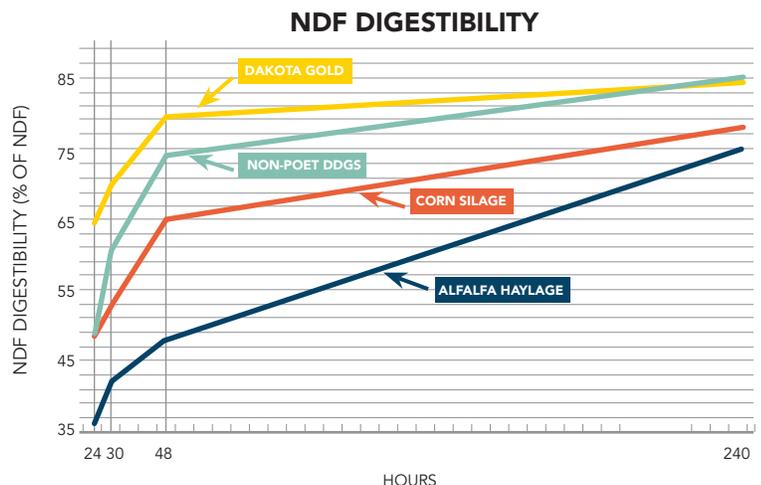


**Biohydrogenation Theory for Milkfat Depression.** Feeding too much linoleic acid—a fatty acid in DDGS—results in the production of certain fatty acid intermediates, which cause decreases in milkfat production. Feeding less linoleic acid minimizes this risk.<sup>1</sup>

### Improved Digestibility

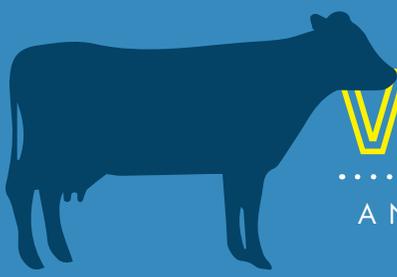
POET’s BPX process minimizes the amount of heat during bioethanol and DDGS production. This reduces the negative effects of the Maillard reaction which can bind some of the protein and fiber.

**Greater digestibility means the animal can capture and use more of the nutrients in Dakota Gold compared with non-POET DDGS. This results in greater energy and value for the animal.**



**Improved Digestibility.** Faster rates of NDF digestibility mean that dairy cattle can capture more of the energy in the fiber. Greater amounts of energy mean better performance—more milk production, energy for reproduction and weight gain.

\*These results are not a guarantee of nutritional value, as laboratory results are influenced by factors beyond the control of POET Nutrition.



# WRINKLE

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## Consistency

Unlike other ingredients like soybean meal, producing distillers grains requires fermentation through a biological process of yeast converting starch to bioethanol. As with any biological process, we see variability because of a number of different factors.

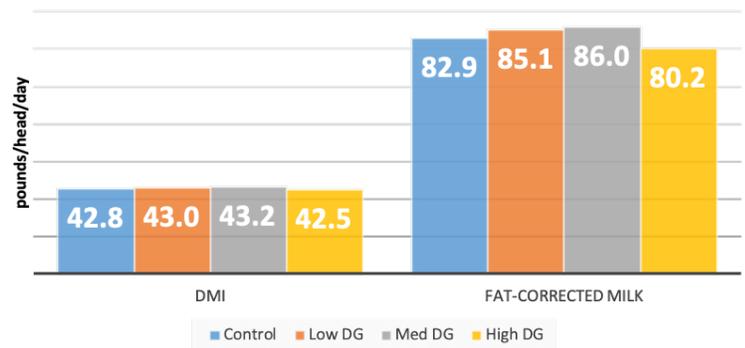
**POET carefully monitors the nutrient content of the distillers grains as it moves through the process of bioethanol production. If one of the bioprocessing facilities identifies that the distillers grains do not meet the narrow range of nutrient specifications for key nutrients like fat and protein, it segregates that material and sells it as DDGS and not as Dakota Gold. This means that when a producer receives Dakota Gold, it remains very consistent with very few changes.**

## Fiber

Dairy cows require fiber in their diet to maintain optimal performance and good rumen health. Too little fiber can cause cows to develop conditions like acidosis or sub-acute ruminal acidosis (SARA).

**Research has demonstrated that Dakota Gold can effectively replace alfalfa hay in lactating dairy cow diets. This provides flexibility in formulation and potential cost savings when forages become scarce or over-priced.**

### FORAGE REPLACEMENT - UNL RESEARCH



**Fiber.** Research at The University of Nebraska demonstrates that Dakota Gold can replace higher-priced alfalfa hay in lactating dairy cow diets. This study replaced 100% of the alfalfa (18% of the diet dry matter) and observed similar intake and equal or better milk production with no effects of milkfat.

## Cost Competitive

Producers and nutritionists need to consider costs and look at metrics like income over feed costs to determine the best strategies for ingredient purchases.

**Dakota Gold provides a great source of both protein and energy. We can use software programs like Sesame and AMTS to demonstrate the Dakota Gold provides significant value when factoring in the complete nutrient profile.**

## References

1. Lock, A.L. (2019, April 23). Milk fat depression involves many factors. Pioneer Seeds. Retrieved September 21, 2021, from <https://www.pioneer.com/us/agronomy/milkfat-depression.html>.

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