

## Can I Feed Dakota Gold and Corn Silage Together?

Dried distillers grains with solubles (DDGS) and corn silage represent two of the most commonly used ingredients in dairy formulations. Additionally, these ingredients have similar nutritional characteristics and benefits for the dairy cows. This sometimes causes nutritionists to question if they can include both in diet formulations. Fortunately, recognizing and adjusting for certain factors can allow nutritionists to capture value from both ingredients.

### BACKGROUND

Corn silage has many advantages over other ingredients. It has a good nutritional profile that supplies both digestible fiber and energy for ruminants. Secondly, provided that it gets harvested correctly and on time, corn silage has less variability than other ingredients. Finally, it provides significant tonnage to meet the forage requirements of ruminants. Distillers grains also provides significant value to livestock producers. Similar to corn silage, it provides a source of digestible fiber and energy. Furthermore, the growth of the ethanol industry has made distillers grains readily available for producers. Finally, the large supply has made distillers grains very cost competitive.

### MAJOR FACTORS

#### • FIBER

Table 1 shows the differences in fiber between corn silage and Dakota Gold.

The stalks and husks contribute to the greater fiber content of corn silage. However, at 72 hours of incubation, more of the fiber in Dakota Gold gets degraded (87.5% vs 71.1%).

Table 1	Corn Silage	Dakota Gold
ADF (% of DM)	28.1	11.3
NDF (% of DM)	45.0	30.4
72 hour uNDFom (% of DM)	13.0	3.8

#### • ENERGY

Table 2 shows the differences between corn silage and Dakota Gold.

Dakota Gold contains more energy than corn silage. These values can vary depending on growing conditions and variety of corn silage.

Table 2	Corn Silage	Dakota Gold
NE <sub>m</sub> (Mcal/lb of DM)	0.71	0.89
NE <sub>g</sub> (Mcal/lb of DM)	0.44	0.60
NE <sub>l</sub> (Mcal/lb of DM)	0.65	0.91

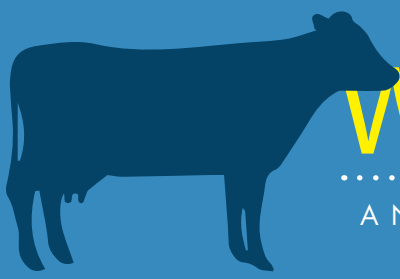
#### • PROTEIN

Table 3 shows the differences between corn silage and Dakota Gold.

Dakota Gold contains significantly more protein than corn silage. Additionally, more of the protein in Dakota Gold escapes ruminal digestion and a larger percentage gets digested in the small intestine.

Table 3	Corn Silage	Dakota Gold
Crude Protein (% of DM)	8.8	31.0
Rumen Undegraded Protein (% of CP)	35.3	73.4
Digestibility of RUP (% of RUP)	70.0	89.1

\*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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DakotaGold

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## OTHER FACTORS

- **PARTICLE SIZE**

Both corn silage and Dakota Gold have relatively small particles. As a result, when feeding both ingredients, producers will want to ensure the diet contains enough longer-stemmed forages.

- **MOISTURE**

Typical corn silage contains between 60 and 70% moisture. As a result, including corn silage can help with total ration characteristics. However, too much moisture can sometimes reduce stability of the total ration (bunk life) and in some cases create mold and mycotoxin accumulation. In this case, adding Dakota Gold can maintain an acceptable moisture content of the ration. Alternatively, if nutritionists desire more moisture, they can include wet or modified distillers grains.

- **AMINO ACIDS**

Both corn silage and Dakota Gold contain less lysine than other ingredients. Nutritionists who use Dakota Gold will want to evaluate the supply of metabolizable amino acids and if needed, adjust other ingredients or include rumen-protected amino acids to meet the amino acid requirements of the animal.

- **DIET COST**

Including both Dakota Gold and corn silage can decrease feed costs compared with including just one of these ingredients. However, cost of corn silage can often vary depending on harvesting costs, land prices, yield, moisture content, and hauling distance. Nutritionists will want to consider all of these variables when calculating the price for least-cost formulations.

- **STORAGE**

Feeding corn silage requires significant planning. Producers need to identify planting acres and plan for storage or ensiling of the corn silage. Nutritionists also need to plan for estimated usage in order to provide a consistent supply throughout the year. Alternatively, producers can purchase Dakota Gold throughout the year and adjust inclusion to meet their requirements.

## RESEARCH SUMMARY

Because of the factors involved with growing, harvesting, and storing corn silage, nutritionists will often use corn silage as the base for their formulation and then include Dakota Gold to balance the formulation. Recognizing the differences and similarities in nutrient profiles between corn silage and Dakota Gold will help to precisely meet these requirements. This approach along with considering how factors like particle size, amino acid profile, and moisture content affect animal performance will provide opportunities for dairy producers to reduce feed costs and improve profitability.

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