Meeting the Nutritional Needs of Dairy

NATIONAL CORN GROWERS ASSOCIATION

with Dried Distillers Grains and Next Generation Feed Products

Background on DDGs:

Distillers grains (DGS) often marketed as dried distillers grains with solubles (DDGS, are a co-product of the ethanol production process and an important source of rumen undegradable protein that continues to be produced in large quantities by the dry-grind fuel ethanol industry. They are rich in the protein, fat, minerals, yeast, and vitamins that animals need, making them a very popular feed ingredient for cattle, swine, and poultry alike.

These distillers grains are widely used as feed for livestock and are marketed as DDGS, modified distillers grains with solubles (MDGS), wet distillers grains with solubles (WDGS), or condensed distillers solubles (CDS or corn syrup). Approximately 40 million metric tons of DDGS are produced annually. Cattle account for nearly 80 percent of DDGs consumption (50 percent attributed to beef cattle and 30 percent attributed to dairy cattle) and are a very important customer of this co-product. Dairy cattle producers recognize the product as an economically beneficial, nutritionally valuable source of protein and energy, and research has found that increasing DDGS inclusion rates increase production performance.

Dairy & Distillers Grains:

There are multiple advantages to feeding distillers grains. Drying them increases shelf life, allowing DDGS to be transported longer distances. Distillers grains can also be sold wet to local feeders, and while the shelf life is not as long, the nutritional value can actually be better depending on species plus, these wet distillers grains are generally more economical due to savings on drying costs. Energy intake has been found to be greater when byproducts were included at 40 percent of diet (DM). These results agree with previous research on traditional distillers grains products. The yeast generated in fermentation is, in addition, a very important functional component of the protein found in distillers feed products.

"These products have been on our radar for a long time and have been in the business for most of my career," says Dr. Lynn Davis, from Nutrition Professionals, Inc. "Back in the 80's DDGS products were coming from the beverage industry, but as ethanol took off, the availability of these products skyrocketed. With ethanol plants found in Dairy Belt regions, these products are not only attractive and readily available, but they're also a great source of concentrated cost-effective nutrients for your herd. Wet DDGS adds a great glue-like property to the ration that can help prevent sorting and separation. It's important to monitor product oil content so that you don't overfeed corn oil to your lactating cows, which can negatively impact milk fat production, but inclusion rates can be higher for replacement heifers if the economics allow".

Co-products from wet and dry corn milling have become important sources of energy, protein, digestible fiber, minerals, and vitamins, and as improvements in operating efficiency of biorefinery ethanol plants occur, new products and innovations are continuously being developed. There are several new corn fractionation technologies being deployed in dry mills across the U.S. These technologies create value by separating out the various components of corn to allow improved utilization of the subsequent product streams. By separating corn into its most valuable components, there is an opportunity for the nutritional needs of individual animal species to be better met and the subsequent protein and oil streams to have improved utilization. While corn and the current distillers grain products are advantageous when fed in combination and will continue to be a great choice, cattle at different stages of growth may further benefit from specifically fractionated feed products that have the ability to provide nutrients at more optimal levels than products currently produced. Fractionation allows ideal rations to be developed for cattle in various geographies and life stages.

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Where the Industry is Headed:

With ongoing research and feeding trials, resources and materials for producers and nutritionists are being developed. Research from Penn State concluded that feeding distiller grain products to dairy cows is a great option to provide supplemental rumen undegradable protein as well as energy. In fact, research has found that diets containing HP-DDG products have higher, more concentrated rates of energy, likely a reflection of the greater amounts of fat found in the diet. Another study found that this more economic effective product can be linked to heightened true milk protein, scoring higher than other traditional competitors' feed products such as soybean meal and canola meal. Recent research from Dr. Ramirez Hugo at Iowa State University has demonstrated that reducing the fat content of DDGS allows the product to be included in diet formulation at higher inclusion rates without the risk of negative interactions in the rumen and the risk of milk fat depression.

It is important to note that while some ethanol plants may invest in the biorefinery technology and produce these new products, others may not, which presents an opportunity for dairy producers to continue using the traditional DDGS products available to them but also explore new options. While there is much more to come on next-generation feed products, it is important to remember the value of current distillers grains products as well as corn grain. Any new products will require ongoing research and feeding trials to determine cattle response and performance and communication within the dairy industry to help producers make the choices that best serve their bottom line. For these reasons, the corn, ethanol, and animal agricultural industries are co-dependent upon one another for their success and mutual prosperity. The National Corn Growers Association (NCGA) and its affiliates are proud to play an integral role with two important industries that impact the health of rural America.

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