

## and Where the Industry is Headed

### 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, economically attractive feed ingredient 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. These distillers grains are widely used as feed for livestock and are marketed as dry distillers grains with solubles (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 in locations across the US.



DDGS are a product that were first recorded in 1790 as a co-product of the Scottish whisky distilling industry, the composition of the product has not materially changed in the interim. DDGS is a co-product that “happened”, it was not designed. That contrasts with the modern-day products that are functional proteins designed for specific purposes.

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### Where the Industry is Headed

The bioethanol industry is going through a period of transition as US dry grind ethanol plants that are the sources of distillers grains and solubles (or DDGS) are evolving into biorefineries producing a range of new products in addition to DDGS. These products have had a long evolution and are now established in the US nutrition market. Currently a number of new corn fractionation technologies are being deployed in dry mills. These technologies create value by separating out the various components of corn to allow differential utilization of the subsequent product streams. By separating corn into its most valuable components, there is the opportunity to optimize feed for animals.

By incorporating additional pre or post fermentation fractionation and various separation steps adding extra control points, the quality of all the end products is significantly more consistent, side streams can be recovered for specific nutritional purposes. Furthermore, reduced dryer loading improves the nutritional value of DDGS and decreases plant carbon usage improving sustainability for the entire system. Fractionation allows ideal rations to be developed for animals of different species in various geographies and life stages.

With ongoing research and feeding trials, new and better resources and materials for animal producers and nutritionists are being developed. Producers are working with regulatory agencies to develop specifications and naming conventions—for now, we will refer to them as next generation feed products (NGFPs). Next generation feed products will offer nutritionists the ability to alter protein, fat, carbohydrates, and fiber to provide more precise feed components to meet the needs of their livestock and optimize growth.

It is important to note that while some ethanol plants may choose to develop these products, others may not. This option allows for the flexibility of livestock producers to continue using the traditional DDGS products available to them, and the ability to explore new ones. Currently less than 10% of operational ethanol plants have adopted these new technologies, however, this sector of the ethanol industry is rapidly developing. The goal of this article is to inform stakeholders of the opportunities for new products thanks to advancements in fractionation. We intend to release a number of additional articles that will discuss the opportunities by specific livestock species—Stay Tuned.