



LEFT:
Phil McEwen

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and supported by in-kind donations from industry sources, is testing samples from six ethanol plants, three in Ontario, one in Quebec, one in Michigan and one in New York. Using samples taken from each plant over a 12-week period, the researchers are trying to determine how the feeding value of dried distillers grains (amino acid and energy digestibility) can be assessed using an objective measure of product colour, nutrient analyses, different laboratory methods and conventional digestibility studies.

Earlier research established that dried distillers grains can be safely fed to pigs (at approximately 20 per cent of diet) from an early stage to market weight. However the amount of available lysine can vary in the feedstuff due to plant manufacturing procedures and corn variety differences. Since lysine is an amino acid essential for growth and muscle development, pig producers have to make sure that lysine requirements are met to ensure optimal performance.

Some previous research has shown that excess heating (drying) can denature some of the feedstuff's lysine content. Product colour may be a good indicator of excess heating and therefore a good predictor of nutrient availability. A dark colored product can be produced as a result of overheating during the drying process and thus a lighter coloured product is commonly associated with a superior nutrient availability for the pig. A number of other factors in the ethanol manufacturing process may also affect the colour of DDGS, such as corn variety and the amount of solubles added to the grain portion during drying.

"Overheating during the drying process may lead to a darker colour which may lead to a reduced energy and amino acid availability," McEwen said.

On the bright side, McEwen said while some variation in protein and lysine content is inevitable due to differences in ethanol production systems and corn supply "it is not all over the map." The ethanol industry is developing and introducing new technologies that not only optimize plant efficiency but also minimize the impacts on the quality of the DDGS, in particular by using lower temperatures throughout the ethanol manufacturing and DDGS drying process. The plants being sampled in this research project are relatively new with up-to-date technology which should help with the relative consistency of the product.

The research was started in the summer of 2008 and is slated to end in the summer of 2011. Will colour prove to be a reliable predictor of DDGS quality? McEwen will only say, "Time will tell."

Kees de Lange and Ira Mandell of the department of animal and poultry science at the University of Guelph and Ron Lackey of the Ontario Ministry of Agriculture, Food and Rural Affairs are collaborating on the project. ■

Identifying the Best Dried Distillers Grains with Solubles for Feeding Pigs

A three-year study is trying to determine how the feeding value of dried distillers grains can be assessed on the basis of product colour, nutrient analyses, different laboratory methods and conventional digestibility studies.

Dried distillers grains with solubles from corn-based ethanol production are readily available and can be less expensive than many other protein and energy sources. But just how good are they and how do you determine the value or

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quality of one batch from another? That's what a group of researchers, led by Prof. Phil McEwen of the Ridgetown Campus of the University of Guelph, is trying to find out.

The three-year study, funded by Ontario Pork