

## RESEARCH PROFILE

BY MIKE MULHERN



## PHIL McEWEN:

### Everything led to a career in teaching and research

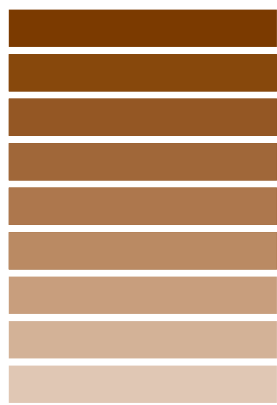
At different points in his career, Phil McEwen has worked as a sales rep, livestock lecturer, agricultural rep and farm management specialist. But no matter what he did, he was always heading toward the research and academic career he now has as a College and Academic Research Group Professor at Ridgetown Campus, University of Guelph.

His academic career started at South Carleton High School in Richmond, Ont. After graduation in 1972, he attended the Kemptville College of Agricultural Technology where he earned an agricultural diploma. He moved on to the University of Guelph where he majored in animal science with a minor in agricultural business, earning a degree in agriculture in 1978. He returned to the University of Guelph in 1982 where he specialized in dairy cattle genetics and earned his master's degree in agriculture.

Although he is currently researching the digestibility of distillers dried grains with solubles (DDGS), he has been involved in a number of research projects over the years evaluating the effects of various feedstuffs and diets on market animals such as swine, beef cattle and veal. Presently, he is also a lecturer for a number of livestock electives at Ridgetown Campus (Animal Science, Beef Production, Dairy Production, and Dairy Cattle Nutrition and Selection),

Phil is a member of the University of Guelph Animal Care Committee and is Chair of the Ridgetown Campus Animal Care Subcommittee. He is also a member of the Health and Safety Committee at Ridgetown Campus and staff member of Spring Expo at Ridgetown.





# DARKER DISTILLERS GRAINS

## may be better after all

Though lighter-coloured DDGS had been thought to be higher feeding value, a Guelph research team is finding that the reverse may be true. Now they plan to check digestibility

BY MIKE MULHERN

**W**hen Phil McEwen started investigating the nutrient content and digestibility of corn distillers dried grains (DDGS) in 2008, conventional wisdom held that the lighter the product, the higher the feeding value because dark-coloured DDGS were associated with lower lysine content and availability for the pig.

Two years into his research, McEwen, a professor at the University of Guelph's Ridgetown Campus, is finding some interesting relationships between product color, lysine content and dry matter digestibility.

"We've always assumed that the lighter the product, the more digestible it is, but we're finding the reverse," McEwen says.

His findings are based on an analysis of 84 DDGS samples, or 12 samples collected from each of seven plants involved in the study, four in Ontario and one each in Quebec, Michigan and New York.

Each one-kilogram sample was analyzed for dry matter, organic matter, crude protein, ether extract, starch, neutral detergent fibre, acid detergent fibre and acid detergent insoluble nitrogen. In addition, product colour was determined on all samples using a colour meter which measures lightness/darkness and various colour profiles. Laboratory digestibility tests were also conducted using procedures to mimic the chemical digestive processes of the pig.

"We took our sample colour readings and deter-

mined how closely they were related to our laboratory digestibility values," McEwen says. "For our 84 samples, there was a slightly higher digestibility for darker versus lighter coloured samples." However, McEwen also noted that the range in sample colour was less than from plants using older technologies to process corn grain into ethanol.

So what does all this prove? McEwen says one trial usually leads to another and that's true in this case, too. The most recent trial seemed to show that darker may be better, but the proof will come from the pig's own digestive system.


In the next phase of McEwen's research, he will check the digestibility of the product when fed to

the pig. The "in vivo" tests will be conducted this spring in Guelph using distillers grains from five of the seven plants in the study. These studies will determine nutrient digestion in the pig's entire digestive tract along with determining nutrient digestion in the small intestine.

"There is a range in nutrient content between DDGS samples from the different plants," McEwen says, "but I believe it is a manageable range which we will confirm by examining nutrient digestion in the live animal. This trial is basically looking at the variability in distillers grains and is quantifying nutrient variability only. We are not looking at the effects of dietary inclusion level on pig performance and carcass quality."

In a separate study, researchers at Ridgetown and Guelph will test meat quality using a control group of pigs fed a typical corn/soy bean meal finisher, along with a group fed 20 per cent DDGS and a group fed 40 per cent DDGS.

"It will be interesting to see how the various amounts of DDGS affect feed efficiency and performance, carcass and meat quality, and cost of production," McEwen says.

McEwen's research team includes Kees de Lange, Ira Mandell, Marko Rudar and Julia Zhu, all of the University of Guelph, plus Ron Lackey, a feed ingredients and byproducts feeding specialist with the Ontario Ministry of Agriculture, Food and Rural Affairs. 

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IS BEING  
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