



Kees de Lange

Trials have shown that adding a combination of enzymes and microbial inoculants to DDGS that is steeped in water increased feed intake and body weight by as much as 15 per cent

BY BERNARD TOBIN

LIQUID FEEDING GETS A BOOST

from enzymes
and microbial inoculants

PHOTO BY MARTIN SCHWALBE



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Biofuel and food industry co-products, such as distillers dried grains with solubles (DDGS) and wheat shorts, provide tremendous potential in reducing pork production costs. But what's the best way to feed these products and realize that value?

The latest results from ongoing liquid feeding research led by Dr. Kees de Lange, animal and poultry science department, University of Guelph, indicate that producers can extract more nutrient value from both liquid and dry co-product feed ingredients when they are used in a computer-controlled liquid feeding system.

De Lange's work is also identifying the significant role played by feed enzymes and microbial

inoculants in increasing the feed value of these co-products for pigs.

In a study that evaluated the impact of feed form -- dry or liquid -- on growth performance of finishing pigs, de Lange found that excellent performance can be achieved through liquid or conventional dry feeding diets that contained 40 per cent wheat shorts.

While the results mirrored what's been learned about liquid feeding in European studies, de Lange notes that pigs on liquid feeding showed a 10 per cent increase in body weight gain compared to dry-fed pigs. However, the study also indicates that growth improvements from liquid feeding are offset by a slight reduction in carcass lean yield.


The bigger story emerging from his research, de Lange says, is what he's learned about how dry co-products can prove more valuable in a liquid feeding system with help from added enzymes and microbial inoculants.

In two growth performance trials, finisher pigs were fed liquid diets containing 30 per cent DDGS. Enzymes and microbial inoculants were used to treat DDGS prior to feeding. In both trials, adding the combination of enzymes and microbial inoculants to DDGS steeped in water increased feed intake and body weight by as much as 15 per cent. Enzymes alone improved feed efficiency by five per cent.

De Lange explains that, when enzymes (glucanases and xylanases) are used in combination with various microbial inoculants (*Lactobacillus acidophilus* and *Pediococcus acidilactici*), fibre is degraded more easily and converted to organic acids that can supply energy to pigs.

"What we learned is that the value added by enzymes and inoculants tends to be larger in liquid feeding systems than in dry systems," says de Lange. "It means that, if you feed pigs in a liquid form, there is just a little more time and opportunity for enzymes and even microbial inoculants to interact with the feed."

When put into dry pig feed, "the only time the enzymes and microbial inoculants can do something is once the feed is eaten by the pig. Now it looks like we are getting interaction and beneficial effects occurring prior to feeding," explains de Lange.

The next step for de Lange is to test this approach over the entire grower-finisher phase and see if it's successful with younger pigs. A closer look at gut health, carcass and meat quality and nutrient losses into the environment is also on de Lange's priority list. 

THE RESEARCH IS SUPPORTED BY: THE SWINE LIQUID FEEDING ASSOCIATION; NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA; ONTARIO PORK; OMAFRA; AB VISTA FEED INGREDIENTS/AB AGRI; BIG DUTCHMAN PIG EQUIPMENT; CASCO INC./CORN PRODUCTS INTERNATIONAL; NUTRECO CANADA INC./SHURGAIN; CHR. HANSEN ANIMAL HEALTH & NUTRITION; LALLEMAND/INSTITUTE ROSELL; GREAT LAKES NUTRITION; AGRIBRANDS PURINA CANADA INC.; FURST MCNESS; GRAND VALLEY FORTIFIERS; DACO ANIMAL NUTRITION; B.S.C. NUTRITION; DWYER MANUFACTURING LTD.