# Xylanase and (or) phytase improves digestible nutrient content of diets containing millrun in grower pigs

T.N. Nortey[1,2], J.S. Sands[3], and R.T. Zijlstra[4]

[1]Prairie Swine Centre Inc., Saskatoon, SK, [2]University of Saskatchewan, Saskatoon, SK, [3]Danisco Animal Nutrition, Marlborough, UK, [4] Dept Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB T6G 2P5; ***Email:*** ruurd.zijlstra@ualberta.ca

Crop co-products might be valuable feedstuffs to reduce feed costs per unit of productivity, especially if nutrient digestibility could be enhanced. Wheat millrun contains more arabinoxylans and phytate than wheat, and might be a more valuable feedstuff if enzymes reduced their anti-nutritive effects.

In a 5 x 5 Latin square, effects of xylanase (4375 U/kg feed) and (or) phytase (500 FTU/kg feed) on energy, dry matter (DM) and P digestibility of a wheat-based diet containing 20% millrun were investigated in a 2 x 2 factorial arrangement together with a positive control (PC) diet. The PC diet was formulated to 3.40 Mcal DE/kg, and 2.7 g app. dig. Lys/Mcal DE. Ileal-cannulated pigs (33.6±1.9 kg) were fed at 3 x maintenance in five periods for 5 observations per diet. Faeces and ileal digesta were each collected for 2 d.

Xylanase supplementation of the NC resulted in energy, DM, P, and Ca digestibilities that were similar to the PC. Phytase improved total tract digestibility of P but not energy digestibility or DE content. Xylanase and phytase interacted to improve total tract P digestibility from 44.9 to 57.0%, similar to the PC. Enzymes did not have strong significant effects in ileal digesta; however, xylanase and phytase tended to improve P and Ca digestibility, respectively

Xylanase and phytase enhanced nutrient digestibility of diets containing wheat and millrun with a reduced energy, Lys, P, and Ca content. These enzymes therefore provide an opportunity to reduce feed costs.

**Implications:** Supplemental enzymes can be used to remove anti-nutritive effects of arabinoxylans and phytate, and thereby enhance nutrient digestibility and the use of wheat by-products such as millrun.