

## ANIMAL SCIENCE

**Title:** Characteristics and Eating Quality of Bacon and Sausage from Finishing Pigs Fed Medium and High Levels of Distillers Dried Grains with Solubles (DDGS) from Ethanol Production  
**NPB # 08-094**

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**Date Submitted:** July 30, 2009

### Scientific Abstract:

An experiment involving 60 crossbred pigs (3 replications of 5 pigs/pen) was conducted to assess the effects of dietary levels of DDGS on pig performance from 35 to 120 kg BW, and on belly firmness, fatty acid composition of the fat, slicing efficiency of the bacon, and eating quality of bacon, sausage, and loin chops. Fortified corn-soybean meal diets containing 0, 15, 30 or 45% DDGS were fed in 3 phases. A common source of DDGS (supplied by ADM, Decatur, IL) analyzing 89% DM, 26.3% CP, 0.96% Lys, 0.18% Trp, 9.7% fat, 34.6% NDF, 0.03% Ca, and 0.86% P was used. Diets were formulated to contain 0.83, 0.70, and 0.58% true ileal digestible (TID) Lys during the 3 phases with diets changed at 61 and 91 kg BW, respectively. DDGS replaced corn and soybean meal, and up to 0.22% L-Lys and 0.04% Trp were added to maintain constant TID levels in each phase. All of the pigs were killed and fat was collected from the midline and belly for fatty acid (FA) analysis and I value. Growth rate and feed intake were not affected by level of DDGS, but efficiency of feed utilization decreased with DDGS inclusion. Backfat was reduced slightly and LM area was increased (quadratic,  $P < 0.05$ ) with increasing amounts of DDGS, but carcass fat-free lean was not affected by diet. Flex measures indicated less firm bellies (linear,  $P < 0.01$ ) as DDGS levels increased. Saturated and monounsaturated FA in subcutaneous and belly fat decreased ( $P < 0.001$ ) and polyunsaturated FA increased ( $P < 0.001$ ) with increasing DDGS in the diet. Iodine values (calculated from the FA data) of outer backfat were 63, 70, 75, and 79, respectively for the four treatment groups (linear,  $P < 0.001$ ). Slicing efficiency was not affected by the softer bellies and, interestingly, quality of fresh bacon slices was improved ( $P < 0.001$ ) in bellies from pigs fed DDGS in which the fat was softer and more unsaturated. Eating quality of cooked bacon, bratwurst sausage, and loin chops did not differ among pigs fed the four DDGS diets. In this study, feeding diets with up to 45% DDGS did not have major effects on pig performance, but resulted in softer bellies and higher iodine values in backfat lipids. Pork quality, however, was not markedly affected by level of DDGS. This project was funded by the National Pork Checkoff.

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These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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