

Title: Net energy of three sources of distillers dried grains with solubles fed to growing and finishing pigs
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SCIENTIFIC ABSTRACT:

An experiment was conducted to determine the NE in distillers dried grains with solubles (DDGS) and in high protein distillers dried grains (HP-DDG) fed to growing and finishing pigs. One source of conventional DDGS (DDGS-CV), 1 source of uncooked DDGS (DDGS-BPX), and 1 source of HP-DDG were used. A total of 52 growing pigs (initial BW: 20.8 ± 2.06 kg BW) and 52 finishing pigs (initial BW: 87.2 ± 9.77 kg BW) were allotted within each stage of growth to 6 treatment groups based on BW. There were 8 replicate pigs in 2 treatment groups and 9 pigs in the remaining 4 treatment groups at each stage of growth. The 2 treatments with 8 pigs at each stage of growth were used as the initial slaughter group (ISG) and all pigs in these groups were harvested at the initiation of the experiment. Pigs in the remaining 4 treatment groups at each stage of growth were housed individually and had free access to feed and water. Treatments included a basal diet containing mainly corn and soybean meal and 3 diets that were formulated by mixing 70% of the basal diet and 30% DDGS-CV, DDGS-BPX, or HP-DDG. Experimental diets were fed to growing pigs for 28-d and to finishing pigs for 35-d. All pigs were harvested at the end of the experiment, and carcass, blood, and viscera were collected and analyzed for GE. The NE values for DDGS-CV, DDGS-BPX and HP-DDG were calculated using the difference procedure by subtracting the contribution from the basal diet to the NE of the treatment diets. Results showed that for both growing and finishing pigs, growth performance was unaffected by dietary treatments. In growing pigs, no differences were observed in energy retention and the NE of DDGS-BPX (1,596 kcal/kg), DDGS-CV (1,665 kcal/kg), and HP-DDG (1,783 kcal/kg) were not different. Finishing pigs fed the DDGS-CV diet had greater ($P < 0.05$) lipid gain than pigs fed the basal diet, the DDGS-BPX diet or the HP-DDG diet. The NE of DDGS-CV (2,718 kcal/kg) was also greater ($P < 0.05$) than the NE of DDGS-BPX (2,065 kcal/kg) and HP-DDG (2,291 kcal/kg). No interactions were observed between ingredient and stage of growth, but the NE of DDGS-CV, DDGS-BPX and HP-DDG was greater ($P < 0.05$) in finishing pigs than in growing pigs. The results suggest that the NE values of DDGS-CV, DDGS-BPX and HP-DDG may vary according to the growth stage, but DDGS-CV contains more NE than DDGS-BPX and HP-DDG.

These research results were submitted in fulfillment of the Nutritional Efficiency Consortium research projects.

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