

Effects of replacing an enzymatically modified soybean meal (HP300) with a corn/yeast protein by-product (Gold Pro) on performance and health status of nursery pigs

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ABSTRACT: The objective was to evaluate complete replacement of enzymatically modified soybean meal (HP300, HP) with a corn/yeast protein by-product (Gold Pro, GP) during days 0-21 post-weaning on performance and health of 1,009 weaned pigs with an average BW of 6.1 kg (SE±0.11) with 27-31 pigs/pen and 6-8 replications/treatment in a large scale commercial research facility equipped with a Fancorn feeding system. Pigs were blocked by BW, sex, sow farm, location within barn, and immediately on arrival were randomly allocated to one of five meal dietary treatments: 100HP (100%HP), 25GP (75%HP:25%GP), 50GP (50%HP:50%GP), 75GP (25%HP:75%HP) and 100GP (100%GP). All diets were formulated to meet NRC 2012 requirements. Gold Pro replaced HP300 on lb for lb basis in the ration and synthetic amino acids, minerals, and fat were added to ensure all diets were equal and met NRC 2012 requirements. Pens of pigs were weighed and feed disappearance recorded on d 0, 21, and 49, which were used to calculate ADG, ADFI, and G:F. Pigs that did not respond to injectable antibiotics were removed, tagged, and placed in sick pens. At the end of the experiment, the dead (% mortality) and pulled (% morbidity) pigs were determined. Injectable treatments were recorded daily. Data were analyzed as a randomized complete block design using GLM procedure in Minitab with Fisher's LSD to determine differences between dietary treatments. For d 0-49, there were no differences (P=0.113) observed for ADG. Pigs fed 100GP had a greater overall G:F (P=0.027) compared to all other treatments. Improved G:F occurred during d 21-49, when all pigs were on a common diet, where pigs fed 100GP had a greater G:F (P=0.011; 0.653 vs 0.634) than 100HP. No differences were observed for d 0-49 % mortality/pen or % morbidity/pen. Pigs fed 100GP had 30% less antibiotic treatments per pen (P=0.047) compared to 100HP. In conclusion, using Gold Pro to replace HP300 in nursery starter rations led to improved overall G:F and a 30% reduction in individual antibiotic treatments.

Table 1. Summary of Day 0 to 49

	100HP	25GP	50GP	75GP	100GP	SE	P-value
ADG, g	500	518	501	519	495	21	0.113
ADFI, g	742 ^{a,b}	772 ^a	740 ^{a,b}	770 ^a	715 ^b	31	0.022
G:F	0.675 ^a	0.671 ^a	0.677 ^a	0.675 ^a	0.692 ^b	0.011	0.027
% Morbidity/pen	1.99	3.04	2.43	5.22	3.71	2.62	0.193
% Mortality/pen	4.01	3.93	3.78	3.87	2.85	3.75	0.984
Treats/pen	51.6 ^a	38.1 ^b	43.6 ^{a,b}	35.9 ^b	35.7 ^b	9.8	0.047