

352 **Effects of hydrolyzed vegetable protein or hydrolyzed vegetable and meat protein blend on nursery pig performance.** M. A. D. Goncalves*, J. M. DeRouchey, S. S. Dritz, M. D. Tokach, R. D. Goodband, J. C. Woodworth, *Kansas State University, Manhattan.*

A total of 280 pigs (PIC 327 × 1050, initially 7.6 kg) were used in a 28-d trial to evaluate the effects of hydrolyzed vegetable protein or a blend of hydrolyzed vegetable and meat protein for nursery pigs. Three days after weaning, pigs were allotted to 1 of 4 dietary treatments in a completely randomized design, balancing for initial BW and gender. There were 10 pens per treatment with 7 pigs per pen. The 4 treatment diets were: (1) no added specialty protein source (negative control); (2) 6% select menhaden fish meal; (3) 5% hydrolyzed vegetable protein (Hydr SF 52, International Ingredient Corporation, St. Louis, MO), or (4) 6.5% hydrolyzed vegetable and meat protein blend (HDSF Protein; International Ingredient Corporation). Treatment diets were fed from d 0 to 17 and a common Phase 2 diet was fed from d 17 to 28. From d 0 to 17, pigs fed the negative control diet had improved ($P < 0.05$) G:F compared with pigs fed diets with Hydr SF 52 or HDSF Protein. No differences ($> P > 0.55$) in ADG and ADFI were detected among treatments. From d 17 to 28 (common period), no difference ($> P > 0.27$) was observed in growth performance between pigs previously fed any of the treatment diets. Overall (d 0 to 28), no differences ($> P > 0.36$) were observed in ADG, ADFI, or G:F. Although pigs fed the hydrolyzed vegetable and meat protein sources had similar performance to pigs fed fish meal, definitive conclusions regarding efficacy of the specialty protein sources tested cannot be made because performance was also similar to pigs fed the negative control diet.

Key Words: hydrolyzed vegetable protein, nursery pig, protein sources

Table 352.

Item	Negative control	Fish meal	Hydr SF 52	HDSF Protein	SEM
d 0 to 17					
ADG, g	255	243	244	245	10.7
ADFI, g	353	351	364	365	23.6
G:F	0.715 ^a	0.686 ^{ab}	0.667 ^b	0.667 ^b	0.02
d 0 to 28					
ADG, g	367	362	361	351	6.8
ADFI, g	585	588	589	582	10.0
G:F	0.629	0.615	0.614	0.603	0.01
BW, kg					
d 0	7.6	7.6	7.6	7.6	0.09
d 17	11.9	11.8	11.7	11.7	0.28
d 28	17.9	17.9	17.7	17.4	0.22

^{a,b} Within rows, means with different superscript differ ($P < 0.05$).

353 **The effects of a combination of a xylanase and multi enzyme non-starch polysaccharide product on growth performance of 12 to 22 kg nursery pigs.** E. D. Fruge^{1,*}, E. Hansen¹, S. Hansen¹, D. M. Compart², J. R. Bergstrom³, ¹Hubbard Feeds, Inc., Mankato, MN, ²Compart's Boar Store, Nicollet, MN, ³DSM Nutritional Products, North America, Marshall, MO.

Two experiments (EXP) were conducted to determine the efficacy of a combination of xylanase and multi enzyme non-starch polysaccharide product [Ronozyme®WX (RWX) and VP (RVP), respectively, DSM Nutritional Products] to quantify the ME uplift potential. In EXP 1, pigs ($N = 969$, 11.67 kg) were allotted to 3 dietary treatments (TRT) with 12 replicates and 27 or 28 pigs per pen in a randomized complete block design (RCBD). The EXP 1 TRT were; 1) Control (C), 3450 kcal/kg ME; 2) Negative Control (NC), 3329 kcal/kg ME; 3) NC + 227 g/ton RVP + 150 g/ton RWX. In EXP 2, pigs ($N = 889$, 13.33 kg) were allotted to 2 dietary TRT with 16 replicates and 27 or 28 pigs per pen in a RCBD. The EXP 2 TRT were; 1) C, 3450 kcal/kg ME; 2) C with 3382 kcal/kg ME + 227 g/ton RVP + 150 g/ton RWX. All diets were mash Corn-SBM- 20% DDGS based. Data were analyzed using GLM procedure in SAS. In EXP 1, there were no effects of TRT on ADG. Pigs fed TRT 2 and 3 had increased ADFI compared with pigs fed TRT 1. Pigs fed TRT 1 had the greatest G:F, TRT 2 poorest, with TRT 3 intermediary. Basis the caloric efficiency of the TRT 1 (5630 kcal/kg gain), TRT 2 and 3 were calculated to contain 3270 and 3354 kcal/kg ME, respectively. The caloric uplift of TRT 3 vs. 2 was calculated to be 83 kcal/kg ME. In EXP 2, pigs fed TRT 2 had similar ADG, ADFI, and G:F compared with pigs fed TRT 1. Basis the caloric efficiency of TRT 1 (5611 kcal/kg gain), TRT 2 was calculated to contain 3501 kcal/kg ME which suggests a release of 120 kcal/kg ME. The combination of RWX and RVP was calculated to release 83 to 120 kcal/kg ME.

Key Words: enzyme, growth, pig

Table 353.

	Initial BW, kg	ADG, g	ADFI, g	G:F	Final BW, kg
EXP 1, 20.5 d					
TRT 1	11.65	378	616 ^b	0.61 ^a	19.41
TRT 2	11.69	388	688 ^a	0.58 ^b	19.66
TRT 3	11.66	393	660 ^a	0.60 ^{ab}	19.72
SEM	0.12	7.76	11.95	0.008	0.228
$P =$	0.97	0.38	0.01	0.03	0.61
EXP 2, 21 d					
TRT 1	13.40	574	933	0.61	25.45
TRT 2	13.26	580	929	0.62	25.44
SEM	0.12	7.65	10.30	0.004	0.160
$P =$	0.42	0.57	0.80	0.15	0.57

^{1,a,b,c} Within a column, means without common superscript differ ($P < 0.05$).