321 **(UGS) Comparison of fermented soybean meal processing methods on nursery pig growth performance.** A. B. Clark*, H. L. Frobose, J. M. DeRouchey, M. D. Tokach, S. S. Dritz, R. D. Goodband, J. Woodworth, *Kansas State University, Manhattan.*

A total of 292 nursery pigs (PIC 327 × 1050; 6.0 ± 1.1 kg BW and 21 d of age) were used in a 31-d experiment comparing processing methods of fermented soybean meal (FSBM; Nutraferma, North Sioux City, SD) on growth performance. There were 11 replicate pens/treatment and 6 or 7 pigs/pen. At weaning, pigs were allotted to pens by initial weight to 1 of 4 treatments in a completely randomized design. A 3-phase diet series was used with treatment diets fed during phase 1 (d 0 to 7) and phase 2 (d 7 to 21), with a common diet fed from d 21 to 31. Diets were: 1) negative control (NC; no specialty protein sources), 2) positive control (PC; 4% dried porcine solubles + 1% standard FSBM), 3) FSBM processing method 1 (FSBM1; 5%), and 4) FSBM processing method 2 (FSBM2; 5%). The alternative FSBM processing methods incorporated a proprietary additive post-fermentation at increasing levels (FSBM2 > FSBM1) to further break down anti-nutritional factors. Nutrient analyses of specialty protein sources generally matched for the PC, but in FSBM1 and FSBM2 the CP and AA levels were lower than formulated, with FSBM1 generally 10% lower than FSBM2. From d 0 to 21, pigs fed PC and FSBM2 diets had increased ADG ($P < 0.05$) while pigs fed PC, FSBM1 and FSBM2 diets had improved G:F ($P < 0.05$) compared to NC pigs. Also, pigs fed FSBM1 tended ($P < 0.06$) to have decreased ADG and G:F vs. pigs fed the PC diet. During d 21 to 31, no differences were observed. Overall (d 0 to 31), ADG was higher ($P < 0.01$) for PC pigs and tended to be higher ($P < 0.07$) for pigs fed diets containing FSBM2 versus the NC, with pigs fed FSBM1 intermediate. Overall, pigs fed FSBM2 had greater performance than those fed the NC and similar performance to pigs fed the PC, whereas those fed FSBM1 did not. The lower CP and AA content in FSBM1 may have contributed to its diminished growth response.

Key Words: fermented soybean meal, nursery pig, protein sources

Table 321.

	NC	PC	FBSM1	FBSM2	SEM	*P* <
D 0 to 21						
ADG, g	225[a]	259[by]	237[abx]	249[b]	8.31	0.03
ADFI, g	342	353	339	342	9.45	0.75
G:F	0.666[a]	0.737[by]	0.703[bx]	0.728[b]	0.018	< 0.01
D 0 to 31						
ADG, g	307[ax]	339[b]	322[ab]	328[aby]	8.02	0.05
ADFI, g	476	507	493	488	11.75	0.32
G:F	0.646	0.668	0.654	0.673	0.008	0.10

[a,b] $P < 0.05$,
[x,y] $P < 0.10$

322 **Evaluation of increasing peptone blend on nursery pig performance.** M. A. D. Goncalves*, J. R. Flohr, S. S. Dritz, M. D. Tokach, J. M. DeRouchey, R. D. Goodband, J. C. Woodworth, *Kansas State University, Manhattan.*

A total of 270 pigs (PIC 327 × 1050, initially 7.1 kg) were used in a 28-d trial to evaluate the effects of increasing levels of a peptone blend on nursery pig performance. The peptone blend is derived from pharmaceutical extraction of chondroitin sulfate from bovine cartilage and then drying on a soybean hull carrier. Each treatment had 8 replicate pens and 6 or 7 pigs per pen. Dietary treatments were: (1) a diet with 1% blood meal and 2% select menhaden fish meal (positive control), (2) a diet with no added specialty protein source (negative control), (3) a diet containing 4% peptone, (4) a diet containing 8% peptone, or (5) a diet containing 12% peptone. Experimental diets were formulated to contain 1.30% SID Lys, and a minimum Val:Lys ratio of 68% without any adjustment for dietary energy content and fed for 14 d. Then a common Phase 2 diet was fed for an additional 14 d to determine carry over effects on growth performance. From d 0 to 14, pigs fed increasing peptone blend had increased (linear, $P < 0.001$) ADFI but poorer (linear, $P < 0.001$) G:F. From d 14 to 28, when pigs were fed a common diet, pigs previously fed increasing peptone blend had increased (linear, $P = 0.03$) ADFI and poorer (linear, $P = 0.001$) G:F. Overall (d 0 to 28), pigs fed diets with increasing peptone blend for the first 14 d had increased (linear, $P < 0.001$) ADFI and poorer G:F (linear, $P < 0.001$) with no differences in ADG ($P = 0.87$). Pigs fed the positive control diet had increased ($P = 0.01$) overall ADFI compared with pigs fed negative control diet. Up to 4% of the peptone blend can be used in nursery diets from 7 to 11 kg without negatively impacting growth performance.

Key Words: growth performance, nursery pig, peptone blend

Table 322.

Item	Positive control	Negative control	4% peptone	8% peptone	12% peptone	SEM
d 0 to 14						
ADG, g	283	265	264	258	281	12.5
ADFI, g[a]	399	371	386	429	463	13.5
G:F[a]	0.708	0.716	0.683	0.601	0.608	0.02
d 0 to 28						
ADG, g	416	401	396	386	402	8.8
ADFI, g[a,b]	651	608	624	651	685	13.3
G:F[a]	0.640	0.659	0.636	0.593	0.588	0.01
BW, kg						
d 0	7.1	7.1	7.1	7.1	7.1	0.06
d 14	11.1	10.9	10.8	10.8	11.2	0.21
d 28	18.8	18.4	18.2	18.0	18.5	0.27

[a] Linear increasing peptone ($P < 0.05$).
[b] Positive vs. Negative control ($P < 0.05$).