150 Dairylac 80®, milk chocolate product, and dried whey as .rces of simple sugars in starter diets for weanling pigs. G. L. mwell, W. A. Dozier III*, M. D. Lindemann, H. J. Monegue, *University of ntucky, Lexington.*

experiment was conducted to assess various sugar sources in starter s for weanling pigs. Sources included Dairylac 80® (International redient Corp., St. Louis, MO), a granular, nonhygroscopic product duced from sweet dried whey solubles, milk chocolate product, (Interna- ıal Ingredient Corp.), a product of the chocolate, candy, and food ıstries, and spray dried whole whey (edible grade; Mid-American rymen, Glasgow, KY). These products typically contain 8, 12, and 13% .26, 1.15, and .95% lysine; and 80% lactose, 60% sucrose-lactose (2:1 ıo), and 68% lactose, respectively. Hampshire-Yorkshire pigs (n = 162) e weaned at 28-30 d of age (initial weight = 8.4 kg) and allotted to six ary treatments. Pigs were housed in a temperature controlled nursery h elevated deck floors and fed their respective diets for 28 d (final weight 9.0 kg). There were five pen replicates of five or six pigs/pen. The basal . was corn-soybean meal with 2.5% animal blood cells (AP 301G®, erican Protein Corp., Ames, IA) and fortified with L-lysine·HCl, DL- hionine, minerals, vitamins, antimicrobials (Aureomix-500®) and SO_4 (250 ppm Cu). Diet 2 included 21.2% dried whey, which provided 5% lactose. Diets 3, 4, 5, and 6 included 18, 15, 12, and 9% Dairylac 80 l 0, 3, 6, and 9% milk chocolate product, respectively. All diets were ulated to contain 1.25% lysine. Daily gain, daily feed intake, and feed: n were, respectively: 348, 367, 404, 397, 369, and 381 g/d; 587, 674, 691, , 637, and 589 g/d; 1.69, 1.85, 1.70, 1.66, 1.71, and 1.55. Dried whey ition resulted in increased growth rate and feed intake as compared with trols, but the differences were not significant (P = .10). Addition of rylac 80 increased growth rate (P < .05) and feed intake over controls. stitution of milk chocolate product for Dairylac 80 did not affect growth e except at the higher levels of addition, and tended to reduce feed ake. Feed/gain was not affected by treatment. These results indicate that rylac 80® is as effective as dried whey as a source of lactose for weanling s. A 5:1 blend of Dairylac 80:milk chocolate produce was as effective as rylac 80 alone.

Key Words: Pig, Sugar, Lactose

151 Evaluating an extruded turkey mortality product as a plemental protein source for nursery pigs. A. Wood*[a], M. Stewart[b], Stewart[a], M. Newcomb[b], *Lincoln University[A], Jefferson City, Mo, University of sour[B], Columbia.*

ssbred pigs (N=164) weighing an average of 6.01 kg at weaning (avg =19 d) were used in two trials designed to evaluate performance of ining pigs on a diet utilizing extruded turkey mortalities as a plemental protein source. A randomized complete block design was used h both time and initial weight used as blocking factors. Three diet atments were used. All diets were corn/soy based. Treatment 1(T1) tained spray dried porcine products, treatment 2(T2) contained ruded turkey mortality product and treatment 3(T3) was utilized a ple corn/soy diet. All phase diets were balanced to supply equal levels of ose and added fat (phase 1, 1.6% and 4%; phase 2, 1.3% and 3%, pectively). For trial 1 weights were taken on d 0,7,14 (phase 1) and d 33 ase 2). For trial 2 weights were taken on day 0,7,14 (phase 1) and 35 ase 2). In phase 1, week 1, ADG was greater for T1 (P<.05) than for T2 l T3. In week 2, treatment did not affect ADG. For the 14 d phase 1 iod, ADG was not significantly different but T1 did show a trend toward proved ADG (P<.066). ADG in phase 2 was not significantly different. ase 1, T1 ADFI was greater (P<.05) than T2 and T3. Phase 2, T2 ADFI s greater (P<.05) than T1 and T3. In phase 1, G/F was not different. ring phase 2, treatment 2 had a 11.3% and 10.0% lower G/F (P<.05) n treatments 1 and 3, respectively. These results suggest that this ruded turkey mortality product can be substituted for a portion of bean meal without affecting growth in young pig diets.

Performance Data-
Combined Trials and Repetitions

atment	1	2	3	SEM
G, wk 1	28[a]	22[b]	23[b]	.03
G, wk 2	52	50	50	.03
G, P1	40	36	36	.02
G, P2	67	65	65	.03
FI, P1	49[a]	44[b]	45[b]	.02
FI, P2	1.07[a]	1.18[b]	1.07[a]	.06
', P1	82	82	82	.01
', P2	62[a]	55[b]	61[a]	.01

/alues with different superscripts are significant at P<.05.

y Words: Nursery Pigs, Extruded Turkey Mortality

152 Evaluation of Spray Dried Pig Food Cheese as a Supplemental Protein Source for Weanling Pigs. J. A. Loughmiller*, J. L. Nelssen, R. D. Goodband, M. D. Tokach, P. S. Graf[1], S. S. Dritz, J. R. Bergstrom and R. E. Musser, *Kansas State University, Manhattan and [1]Land O' Lakes, Inc., Arden Hills, MN.*

A total of 249 weanling pigs (initially 4.9 kg and 18 ± 3 days of age) was used in a randomized complete block design to determine the effects of substituting spray dried pig food cheese (Land O' Lakes Inc., Arden Hills, MN) on growth performance of early-weaned pigs. The cheese food is a pure cheese product containing 2.5% lysine and 41% fat. It is reprocessed from cutting and wrapping room scraps and contains no added soybean products. Pigs were fed five levels of spray-dried plasma protein (SDPP) and cheese food (1.5% lysine, 19% CP) from d 0 to 14 postweaning then switched to a common, 1.3% lysine, corn-soybean meal diet until 28 d postweaning. Cheese food replaced SDPP on an equal lysine basis with SDPP:cheese food levels of: 5.88:0; 4.41:4.0; 2.94:8.0; 1.47:12.0; 0:16.0%. Added dietary soybean oil content was reduced as cheese food increased to maintain a constant energy level. From d 0 to 7, 7 to 14 and 0 to 14, increasing cheese food resulted in decreased ADG and ADFI (linear, P < .05). However, there were no differences observed (P > .10) in feed efficiency (G/F). Although there was a linear decrease in ADG and ADFI of pigs fed increasing cheese food, the decrease in ADG became most apparent with greater than 4% cheese food. Day 0 to 14 postweaning data is posted below. Results suggest replacing 1.47% SDPP with 4% cheese food did not decrease growth performance. From d 14 to 28 or 0 to 28, there were no differences in growth performances of pigs fed increasing levels of CHF from d 0 to 14 postweaning. These results indicate approximately 4% cheese food can be utilized as an effective protein source in diets for the early weaned pig. Levels above 4% cheese food depressed both ADG and ADFI.

	Plasma Protein:Cheese Food						Probability (P<)	
Item	5.88:0	4.41:4.0	2.94:8.0	1.47:12.0	0:16.0	CV	Linear	Quadratic
ADG, g	286	282	254	259	227	12.8	003	67
ADFI, g	327	318	295	282	268	10.0	007	98
G/F	.87	.89	.86	.92	.85	9.4	55	37

Key Words: Pigs, Cheese food, Protein

153 Effect of fructooligosaccharides on growth performance of the weaned pig. T. J. Russell*, M. S. Kerley, and G. L. Allee, *University of Missouri, Columbia.*

Fructooligosaccharide (FOS), an oligosaccharide composed of glucose and two to four fructose units, was proven in our laboratory to stimulate growth of beneficial indigenous microflora in the colon of young pigs, which prevents enteric colonization by pathogenic microorganisms and improves nitrogen retention. Two 28-day nursery experiments using a total of 96 weaned pigs were conducted to evaluate the influence of FOS on growth performance. Experiment 1 (EXP1) and experiment 2 (EXP 2) were conducted simultaneously at one facility with the same diets. The experiments were analyzed as a completely randomized design with 2 × 2 factorial arrangement of treatments. Pigs were housed in an environmentally regulated off-site nursery and given ad libitum access to feed and water. Pig weights and feed intake were measured every 7 days. Treatments were based on high density diets with or without FOS and with or without antibiotic (Ab): FOS at 0 or 0.1 g/day and carbadox at 50 g/ton. In EXP 1 pigs (4.85 kg) were fed Phase I diets for 2 weeks. In EXP 2 pigs (6.17 kg) were fed Phase I diets for 1 week. Pigs in both experiments were fed Phase II diets for 2 weeks. In EXP 2 pigs were fed Phase III diet the last week. Results from EXP 1 at 28 days post-weaning demonstrated increased body weight (P < 0.05) due to presence of FOS with no effect of Ab inclusion. Results from EXP 2 demonstrated that FOS and Ab both increased (P < 0.05) body weight at 28 days post-weaning. Feed efficiency for EXP 1 was different (P < 0.05) based on Ab inclusion and different for EXP 2 (P < 0.05) due to presence of FOS. This research demonstrated that FOS resulted in improved growth performance post weaning in EXP 1 and EXP 2 and Ab inclusion improved growth in EXP 2.

Growth Performance 28 Days Post Weaning

Body weight (kg)	+ FOS	- FOS	+ Ab	- Ab
EXP 1[a]	15.7	14.7	15.0	15.3
EXP 2[a,b]	18.4	16.4	18.4	16.4
Gain:Feed				
EXP 1[b]	0.67	0.67	0.63	0.71
EXP 2[a]	0.67	0.58	0.63	0.58

[a]FOS P<0.05.
[b]Ab P<0.05.

Key Words: Fructooligosaccharide, Pig, Growth