Abstract: Six ileal-cannulated barrows (28.0±1.3 kg initial BW) were used in an incomplete Latin square design over four periods (n=7 or 6) to determine standardized ileal digestible (SID) AA and digestible energy of two modified soy protein concentrates [MSPC1 and MSPC2] and soybean meal (SBM). Pigs were fed one of three cornstarch-based diets with either MSPC1 or MSPC2 or SBM as the sole source of AA at a rate of 2.8 × estimated maintenance energy requirement. In each period, pigs were adapted to diets for 7 days followed by 2 days of fecal collection and subsequently, 2 days of continuous ileal digesta collection for 8 hours. The SID of AA were calculated using basal endogenous losses from a previous study for pigs fed a nitrogen-free diet. The digestible energy of the ingredients was calculated according to the difference method using the nitrogen-free diet that contained the same cornstarch:sucrose:oil ratio as the three test diets. The SID of crude protein was greater for MSPC1 (96.9%) than for SBM (91.3%; P < 0.05), while an intermediate value was observed for MSPC2 (94.3±1.2%). The SID of Ile, Leu, Lys (93.9%), Phe, and Val were not different between MSPC1 and MSPC2 but greater than for SBM (SID Lys: 84.5±1.7%; P < 0.05). The SID of His, Met, and Thr were greater for MSPC2 and SBM (P < 0.05), which were not different. The SID of Arg was greater for MSPC1 than MSPC2 and SBM (P < 0.05), and greater for MSPC2 than SBM (P < 0.05). The digestible energy was greater for MSPC1 (4,677 kcal/kg) than MSPC2 and SBM (3,896±239 kcal/kg; P < 0.05), which were not different. Therefore, the MSPC1 was a better source of SID AA and digestible energy than either MSPC2 or SBM and could be used as a high-quality protein ingredient in swine rations.

**Keywords:** modified soy protein concentrates, pig, standardized ileal digestible amino acids

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**PSIV-18** Standardized Ileal Digestible Amino Acids and Digestible Energy Contents in Two Modified Soy Protein Concentrates and Soybean Meal Fed to Growing Pigs. Lee-Anne Huber¹, Cuilan Zhu¹, Lauren Hansen¹, Cierra Kozole¹, Cristhiam Josephp Munoz Alfonso¹, Jessica Mark¹, Reza Akbari Moghaddam Kakhki¹, Youngji Rho¹, Elijah Kiarie¹, ¹University of Guelph

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**PSIV-20** The Effect of Live Yeast and Yeast Extracts Included in Lactation and Nursery Diets on Nursery Pig Fecal Antimicrobial Resistance. Jenna A. Chance², Joel M. DeRouchey², Raghavendra G. Amachawadi², Victor Ishengoma², Tiruvoor Nagaraju², Robert D. Goodband², Jason C. Woodworth², Mike D. Tokach², Qing Kang³, Joseph Loughmiller³, Brian Hotze³, Jordan T. Gebhardt³, ³Elanco Animal Health, ³Kansas State University, ³Phileo by Lesaffre
Keywords: antimicrobial resistance, nursery pigs, yeast

PSIV-8 Dietary Botanical Blends Modified the Intestinal Microbiota of Weaned Pigs Experimentally Challenged with an Enterotoxigenic E. Coli. Cynthia N. Jinno1, Braden Wong1, Xunde Li1, Emma Wall2, Yanhong Liu1, 1University of California, Davis, 2AVT Natural

Abstract: The objective of this study was to investigate the intestinal microbiota of weaned pigs when supplemented with different botanical blends while being experimentally infected with a pathogenic E. coli. A total of 60 weaned pigs (7.17 ± 0.97 kg) were individually housed and randomly assigned to 1 of the 5 treatments (12 pigs/treatment): sham control (CON-), challenged control (CON+), challenged botanical blend 1 with 100 ppm (BB1_100), challenged BB2 with 50 ppm (BB2_50), and challenged BB2 with 100 ppm (BB2_100). Both botanical blends were composed of capsicum oleoresin but different garlic extract varieties. The experiment lasted for 28 d including a 7-day habituation period followed by an E. coli oral inoculation of 1010 CFU/dose for 3 consecutive days. Ileal, cecal, and fecal samples were collected on d 5 and 21 post inoculation (PI) to perform 16S rRNA sequencing at the V4 hypervariable region followed by a downstream analysis using QIIME2 (v. 2020.8) and R. No difference was observed in alpha diversity among treatments and sites on d 21 PI; however, CON- had the least Shannon and Chao1 indices in ileal digesta on d 5 PI. Bray-Curtis PCoA displayed distinct clusters by treatments in the ileum and cecum on d 5 and 21 PI. On d 5 PI, Bacteroidota was more abundant (P < 0.05) in feces of BB1_100 but was the most abundant (P < 0.05) in ileum of CON-. Pigs in BB2 supplementation were more abundant (P < 0.05) in Proteobacteria in feces than in pigs in CON- at d 5 PI. On d 21 PI, Streptococcaceae was more abundant (P < 0.05) in the ileum of CON+ than of BB2_50 and Lachnospiraceae was more (P < 0.05) abundant in feces of pigs in BB2_100 than in BB1_100. In conclusion, supplementing botanical blend can modify the intestinal microbiota in weaned pigs challenged with a pathogenic E. coli.

Keywords: botanical blends, intestinal microbiota, weaned pigs