

phase, line 482 sows made more feed disappear than line 241 sows (2.67 vs. 2.19 kg/d; $P = 0.010$). However, during lactation feed disappearance was not different between the lines ($P = 0.865$). Total number of pigs born/litter (13.35 vs. 13.90; $P = 0.353$) and number born alive (12.21 vs. 12.66; $P = 0.429$) were similar for control and Luctarom fed sows, respectively. Luctarom did not improve sow feed disappearance or reproductive performance.

Key Words: Sows, Feed Intake, Flavor

795 Supplemental microbial phytase effects the expression of intestinal and liver mineral transporters in the iron/zinc deficient pig. E Tako*, R. P Glahn, R. M Welch, X Lei, and D. D Miller, *Cornell University, Ithaca, NY.*

Over 50% of phosphorous in beans is in the form of phytate that is poorly available. Phytases, catalyze the stepwise removal of inorganic orthophosphate from phytate. Since bioavailability of iron and zinc in foods of plant origin is a function of phytate concentration, we hypothesized that enhanced dietary phytate phosphorus utilization by supplemental microbial phytase might also produce simultaneous improvements in the bioavailability of zinc and iron in red and white beans based diets, and by that means effect iron/zinc related transport protein gene expression in the iron/zinc deficient pig. Iron deficient piglets at age 4 wks were divided into 5 treatment groups (n=4): 1. Standard corn-soy diet (control); 2. 50% white bean diet ; 3. 50% red bean diet ; 4. 50% white bean diet + 1000 units phytase/kg diet; 5. 50% red bean diet + 1000 units phytase/kg diet. Diets 2-5 had no supplemental iron/zinc. After 30 days, animals were killed and sections of tissue from the duodenum and liver were collected for analysis of expression of iron transport genes. Semi quantitative RT-PCR used to evaluate relative expression of DMT1, Dcytb, ZnT1, mucin, ferritin and ferroportin. In the duodenum, DMT1 and Dcytb expressions were higher ($P \leq 0.05$) in the controls compared to all other groups. ZnT1 and mucin expressions were higher ($P \leq 0.05$) in groups 2, 4 compared to other groups. Ferritin and ferroportin expressions did not differ between treatments. As for the liver, ZnT1 and ferritin expressions were increased ($P \leq 0.05$) in treatment 4 compared to other treatments. These results suggest that supplemental dietary phytase may affect genes encoding for iron and zinc transporters and in this way enhance iron and zinc absorption by enterocytes. Support- HarvestPlus.

Key Words: Pig, Phytase, Gene Expression

796 Effects of dried distillers grains and NCKP soybean meal on growth performance and fat quality characteristics of growing/finishing pigs. J. M. Benz*, M. D. Tokach, S. S. Dritz, J. L. Nelssen, J. M. DeRouchey, and R. D. Goodband, *Kansas State University, Manhattan.*

A total of 111 barrows (maternal line PIC 1050) with an initial BW of 47.9 kg were used in an 83-d trial to study the effects of dried distillers grains (DDGS) and extruded expelled soybean meal (EESM) on growth performance and fat quality. Pigs were blocked by weight and randomly allotted to one of six treatments with two pigs per pen and nine pens per treatment. Diets were: a corn-soybean meal control diet with no added fat; corn-EESM diet with no added fat; corn-EESM diet with 15% DDGS; corn-soybean meal diet with 15% DDGS and 1.55% choice white grease (CWG); corn-soybean meal diet with

3.25% CWG; and corn-soybean meal diet with 4.7% CWG. Diets were formulated to have three dietary iodine value (IV) levels (42, 55, and 62) to compare the impact of fat source within dietary IV levels. On d 83, jowl and backfat samples were collected. Pigs fed 4.7% CWG had increased ADG compared with pigs fed either diet containing 15% DDGS. Pigs fed EESM with 15% DDGS or the diets with 3.25 or 4.7% CWG had increased G:F compared with pigs fed the control. Pigs fed either of the diets with 15% DDGS had increased backfat IV compared with pigs fed diets without DDGS. Pigs fed EESM had increased backfat IV when compared with the control diet or diets with 3.25 or 4.7% CWG. Adding DDGS to the diet or using EESM increased IV of jowl fat. Adding CWG to the control diet also increased IV of jowl fat. Feeding ingredients with higher levels of unsaturated fat, such as EESM and DDGS, had a greater impact on fat IV than CWG even when diets were formulated to similar IV levels.

Table 1.

Item	Control	EESM	EESM + DDGS	1.55%		
				CWG + DDGS	3.25% CWG	4.7% CWG
Calculated Diet IV	42	55	62	55	55	62
ADG, kg	0.95 ^{ab}	0.95 ^{ab}	0.91 ^a	0.92 ^a	0.94 ^{ab}	1.00 ^b
ADFI, kg	2.88 ^c	2.74 ^{bc}	2.56 ^a	2.68 ^{ab}	2.61 ^{ab}	2.67 ^{ab}
G:F	0.33 ^a	0.35 ^{ab}	0.36 ^b	0.34 ^{ab}	0.36 ^b	0.37 ^b
BF IV	59.9 ^a	65.0 ^b	70.8 ^c	69.3 ^c	62.1 ^a	61.8 ^a
Jowl IV	64.6 ^a	68.8 ^c	72.3 ^c	70.2 ^d	66.3 ^b	67.1 ^{bc}
BF 18:2, %	11.2 ^a	14.5 ^b	18.4 ^c	17.3 ^c	11.8 ^a	11.9 ^a
Jowl 18:2, %	11.0 ^a	13.8 ^b	16.2 ^c	14.9 ^{bc}	11.6 ^a	11.9 ^a

^{abcde}Means differ ($P < .05$)

Key Words: Iodine Value, Dietary Fat, Pigs

797 Effects of a commercial sequestering agent on performances of fattening pigs fed diet artificially contaminated by aflatoxin B1 and ochratoxin A. G. Battacone*¹, G. A. Carboni², P. Nicolussi², C. Patta², and G. Pulina¹, ¹Dipartimento di Scienze Zootecniche - University of Sassari, Sassari, Italy, ²Istituto Zooprofilattico Sperimentale per la Sardegna, Sassari, Italy.

The use of feed additives with mycotoxin adsorption capacity is a common strategy for controlling negative effects of mycotoxins in swine production systems. However, adsorbents that may results very effective under experimental conditions, i.e. when feed contamination level is rather high, do not necessarily retain their efficacy when tested under field conditions feed with generally low mycotoxin contamination. In this study the effects of diets artificially contaminated with aflatoxin B1 or ochratoxin A on fattening performance and serum chemistry of fattening pigs are investigated. Moreover, the ability of a commercial glucomannan polymer (Gm polimer) to reduce or eliminate the effects of the contaminated feeds is tested. Thirty heavy pigs (BW = 110±10.6 kg) were fed 6 diets (n = 5 pigs/diet) for 4 weeks until slaughtering. Diets were: control without toxin added (C); added with 0.02 ppm of aflatoxin B1 (AFB1); added with 0.05 ppm of ochratoxin A (OTA); other three diets as the previous but the addition of 2.0 g/kg of Gm polymer (C-Gm, AFB1-Gm, OTA-Gm). Daily weight gain (ADG) and feed efficiency ratio were taken every two weeks. Data were analyzed with two-way ANOVA that included the fixed effect of diet, time and their interaction. After the first 2 weeks the ADG did not differ significantly between the diets, even if the ADG of AFB1 diet was about 20% lower than AFB1-Gm or C. In