

PSIV-19 Evaluation of Enogen® high amylase corn on growth performance and carcass characteristics of finishing pigs. Patricia Ochonski¹, Fangzhou Wu¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Steve S. Dritz², Robert D. Goodband¹, Jason C. Woodworth³, James M. Lattimer¹,
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A total of 288 pigs (Line 600 241, DNA, Columbus, NE; initially 41.6 kg) were used in an 82-d trial to determine if replacing conventional yellow dent corn with high amylase corn (Enogen®, Syngenta Seeds, LLC, Downers Grove, IL) in diets with or without distillers dried grains with solubles (DDGS) influences growth performance and carcass characteristics. Diets were arranged in a 2 × 2 factorial with 2 corn sources (yellow dent or high amylase) and 2 levels of DDGS (0 or 25%). Experimental diets were fed in meal form in 3 phases: d 0 to 29, 29 to 47, and 47 to 82. There were 9 pens/treatment each containing an equal number of barrows and gilts. Pigs were weighed approximately every 2 wk and at the beginning of each phase. On d 82, pigs were transported to a commercial packing plant for processing and carcass data collection. Data were analyzed using PROC GLIMMIX procedure of SAS with pen as the experimental unit. There were no interactions ($P > 0.05$) between corn source and DDGS inclusion for overall performance or carcass characteristics. Overall, average daily gain (ADG) was marginally greater ($P < 0.089$) for pigs fed high amylase than yellow dent corn with no evidence ($P > 0.196$) for difference in feed intake, feed efficiency (G/F), hot carcass weight (HCW), or other carcass traits. Addition of DDGS resulted in decreased ($P < 0.037$) overall ADG and G/F. Pigs fed DDGS had marginally lower ($P < 0.071$) HCW, less ($P < 0.050$) backfat, greater ($P < 0.026$) loin depth, and greater ($P < 0.020$) percentage lean and iodine values. In summary, high amylase corn tended to improve overall ADG; however, feed efficiency and carcass characteristics were unchanged between corn sources. Consistent with previous research, addition of DDGS decreased ADG and increased IV.

Table 1. Main effects of corn variety and dried distillers grains with solubles (DDGS) on growth performance and carcass characteristics of finishing pigs¹

Item	Corn source		DDGS, %			Probability, $P <$	
	Yellow dent	High amylase ²	0	25	SEM	Corn	DDGS
Overall performance							
ADG, kg	1.067	1.080	1.084	1.061	0.006	0.089	0.026
ADFI, kg	2.994	3.030	3.007	3.021	0.035	0.328	0.760
Gain/feed	0.355	0.356	0.361	0.351	0.004	0.818	0.037
Carcass characteristics							
Hot carcass weight, kg	96.7	96.7	97.5	96.0	0.730	0.883	0.071
Carcass yield, %	74.9	74.8	75.0	74.7	0.170	0.651	0.139
Lean, %	54.6	54.5	54.3	54.7	0.120	0.400	0.020
Iodine value, mg/g	68.4	69.0	65.3	72.1	0.420	0.400	< 0.0001

¹There were no interactions ($P > 0.05$) of corn source × DDGS for overall performance and carcass characteristics.

²High amylase corn (Enogen®, Syngenta Seeds, LLC, Downers Grove, IL).

³Hot carcass weight used as a covariate.

Keywords: amylase, DDGS, finisher

PSIV-16 Effects of a functional protein on growth performance of nursery pigs. Henrique S. Cemin¹, Luke A. Swalla¹, Jamie L. Pietig¹, Sharlie A. Hansen¹, Ernie L. Hansen¹, Brent W. Ratliff², Aaron M. Gaines², James Usry²,
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Two experiments were conducted to determine the effects of a functional protein (FXP; Ani-Tek Group, LLC, Shelbina, MO) on growth performance of nursery pigs. A total of 840 pigs (PIC 337 × Camborough), initially 5.5 kg, were used with 28 pigs per pen and a total of 15 replicates per treatment. There were two treatments, which consisted of a control diet and the control diet with added FXP. The experimental diets were corn, soybean meal, and whey permeate-based and contained 3,000 mg/kg added Zn. The inclusion of FXP was 0.3% of the diet. Experimental diets were fed for 23 d, followed by a common corn and soybean meal-based diet from d 23 to 48. Pigs were weighed and feed disappearance measured to calculate ADG, ADFI, and G:F. There was no evidence ($P > 0.10$) for treatment × experiment interactions, thus data was combined for statistical analysis using the MIXED procedure of SAS. From d 0 to 23, pigs fed diets containing FXP had higher ($P < 0.05$) ADG, ADFI, and BW and a tendency ($P = 0.053$) for improved G:F. During the common period (d 23 to 48), pigs previously fed FXP had a tendency ($P < 0.10$) for higher ADG and ADFI. Overall (d 0 to 48), pigs that received FXP had higher ($P < 0.05$) ADG, ADFI, BW, and a tendency ($P = 0.055$) for improved G:F. In conclusion, the inclusion of the functional protein improved growth performance of nursery pigs.

Table 1. Effects of a functional protein (FXP) on growth performance of nursery pigs^{1,2}

Item ³	Control	FXP	SEM	Probability, $P <$
BW, kg				
d 0	5.5	5.5	0.08	0.860
d 23	11.3	11.9	0.11	0.001
d 48	24.4	25.5	0.25	0.003
d 0 to 23				
ADG, g	249	276	5.03	0.001
ADFI, g	289	308	4.24	0.004
G:F, g/kg	861	897	13.10	0.053
d 23 to 48				
ADG, g	523	544	8.00	0.069
ADFI, g	712	736	10.28	0.089
G:F, g/kg	736	739	4.63	0.593
d 0 to 48				
ADG, g	390	414	5.11	0.002
ADFI, g	504	525	6.44	0.023
G:F, g/kg	775	789	4.92	0.055

¹A total of 840 pigs were used with 28 pigs per pen and 15 replicates per treatment.

²Experimental diets were fed from d 0 to 23 followed by a common diet from d 23 to 48.

³FXP, Ani-Tek Group, LLC, Shelbina, MO.

³BW = body weight. ADG = average daily gain. ADFI = average daily feed intake. G:F = gain-to-feed ratio.

Keywords: additive, growth, nursery