

**122 Effect of Optimum<sup>®</sup> high oil corn as a replacement for typical corn and choice white grease in finishing pig diets.** T. T. Lohrmann<sup>1\*</sup>, J. D. Hahn<sup>2</sup>, and M. Araba<sup>1</sup>, <sup>1</sup>DuPont Agricultural Products, Des Moines, IA, <sup>2</sup>Farmland Industries, Inc., Kansas City, MO.

A growth and carcass study was conducted to determine whether high oil corn (HOC) can replace typical corn (TC) and choice white grease (F) in the diets of growing and finishing pigs. A total of 96 pigs (48 barrows and 48 gilts) were randomly allotted by sex to 24 pens. Treatments were: (1) HOC, 7.4% oil DM or (2) TC (3.8% oil DM) + F substituted on an equal energy and lysine basis for HOC. Both treatment groups were fed a similar three phase diet sequence (3.4, 2.7, 2.1 g lys:Mcal ME) from an average initial BW of 28 up to 111 kg. Average daily gain, ADFI, and G/F were not different ( $P > .1$ ) between treatments (.86, .84 kg; 2.38, 2.36 kg; .361, .357, respectively). Pigs fed HOC tended to have heavier final weights ( $P < .13$ ), while hot carcass weights showed no difference (84.06 vs 82.91 kg). Also, no differences were detected in dressing percent, Fat-O-Meter (FOM) fat depth, FOM loin depth, FOM carcass lean or NPPC carcass lean (25.9, 24.9 mm; 53.8, 54.6mm; 50.01, 50.21%; 50.34, 50.50%, respectively). At slaughter, carcass subcutaneous fatty acids (percent of fat) for HOC and TC+F were as follows: unsaturated 60.27, 58.76% and saturated 37.57, 39.46%, respectively. These results show that HOC can be an effective replacement for TC+F in the diets of growing and finishing pigs.

**Key Words:** Pigs, Optimum<sup>®</sup> High Oil Corn, Fat

**123 Effect of consumption of potato chip scraps on the performance of growing finishing pigs.** S. Rahnama<sup>\*</sup>, R. Borton, and T. Meek, *Ohio State University ATI, Wooster.*

Seventy pigs (32.47 kg) were used in an experiment to determine the effect of feeding potato chip scraps (fried rejected potato chips due to excessive color) as a source of energy on the performance of growing and finishing pigs. Pigs were blocked by sex and weight and randomly assigned to three treatments in a randomized complete block design experiment. Each treatment consisted of two pens, each holding 11 or 12 pigs. In treatment one (control), 23 pigs were fed a diet consisting of soybean meal and corn supplemented to meet NRC requirements. In treatments two (24 pigs) and three (23 pigs), 12.5% and 25% of the corn, respectively, was replaced with 12.5% and 25% of potato chip scraps (P.C.). A performance trial was conducted over a 90 to 104 day period to measure feed intake (FI), total gain (TG), average daily gain (ADG), and gain to feed ratio (G/F) for these pigs. Individual pig weights and pen feed consumption were determined on a weekly basis. When the average weight of pigs in a pen would reach 100 to 109 kg at the weekly weighings, the experiment for that pen would be terminated. Substitution of different levels of P.C. for corn in the diets had no effect on pen FI or TG of pigs. However, pen ADG for pigs consuming the 25% P.C. diet was lower than those consuming the control or the 12.5% P.C. diets. The G/F was similar between pigs consuming 12.5 and 25% P.C. diets, both being higher than that of the control diet. This experiment demonstrates that (P.C.) at the levels used in this study can be an effective substitute for corn in the diet of growing finishing pigs.

Diet	Feed Intake, kg	Total Gain, kg	ADG, kg	G/F
Control	2463	884	.93 <sup>a</sup>	.36 <sup>c</sup>
12.5% P.C.	2373	931	.94 <sup>a</sup>	.39 <sup>d</sup>
25% P.C.	2255	877	.85 <sup>b</sup>	.39 <sup>d</sup>

<sup>a,b</sup>Different superscripts in the same column indicate significant differences ( $P < .01$ )

<sup>c,d</sup>Different superscripts in the same column indicate significant differences ( $P < .05$ )

**Key Words:** Finishing Pigs, Potato Chips, Performance

**124 Barley-naked oat combinations for growing-finishing swine.** R. L. Harrold<sup>\*</sup>, K. B. Miller, R. C. Zimprich, and S. D. Carter, *North Dakota State University, Fargo.*

Previous research has shown that naked oats have excellent potential in diets for growing-finishing swine but that nutrient:energy relationships are critical to maintain carcass quality. In this experiment, pelleted diets based on various levels of barley (B) and/or naked oats (NO)(as % of grain) were fed to growing-finishing pigs. A pelleted corn-based diet was used as the external control. Three dietary phases were used and nutrient concentrations in the 100% B and 100% NO diets were 94% and 106% of those in the corn-based diet. Diets were fed to three replicates of 4 barrows and 4 gilts. Pigs were assigned at random to pens on the basis of weight outcome groups, gender, and ancestry. Average initial weight was 24.9 kg and individual pens completed the study when average pen weight was 109 kg. Pigs receiving diets based on naked oats or corn had comparable ADG but those fed naked oats had superior F/G ( $P < .05$ ). Pigs fed 100%B had lower ADG ( $P < .05$ ) and higher F/G than pigs receiving the diets based on corn or NO. These data suggest that naked oats can be used as the sole grain or in combination with barley to obtain performance and carcass results comparable to those obtained with corn-based diets.

Item:	%Corn	100	-	-	-	-	-	
	%Barley	-	100	75	50	25	-	
	%N. Oats	-	-	25	50	75	100	
ADG, g		879	807	845	843	868	875	<.001
F/G		2.64	2.92	2.86	2.67	2.54	2.46	<.001
Dressing %		76.1	74.0	74.8	75.7	76.2	76.8	<.001
Shrink, %		2.34	2.51	2.70	2.61	2.38	2.38	<.05
10th rib backfat, cm		2.50	2.18	2.20	2.14	2.55	2.50	<.02
LEA, cm, sq		40.3	42.2	43.2	45.3	43.4	40.3	<.03
Fat-free lean, g/d		328	317	321	345	333	333	>.15

**Key Words:** Barley, Naked Oats, Carcass Characteristics

**125 Effects of source and level of added chromium on growth performance and carcass characteristics of growing-finishing pigs.** P. R. O'Quinn<sup>\*</sup>, J. W. Smith, II, J. L. Nelssen, M. D. Tokach, R. D. Goodband, and K. Q. Owen<sup>1</sup>, *Kansas State University, Manhattan, and <sup>1</sup>Lonza, Inc, Fairlawn, NJ.*

Experiments were conducted to compare growth performance and carcass characteristics of pigs fed added chromium (Cr) either as chromium nicotinate (CrNic) or chromium picolinate (CrPic). Experiment 1 used 72 barrows (initially 36.6 kg), while Exp. 2 used 72 gilts (initially 36.8 kg). In each experiment, pigs were blocked by weight and allotted to one of six dietary treatments. Dietary Cr levels were 0, 50, 100, 200, or 400 ppb Cr as CrNic or 200 ppb Cr as CrPic. All diets were fed in meal form in three phases: 36.3 to 59.0, 59.0 to 81.6, and 81.6 to 104.3 kg BW. In Exp. 1, barrows fed increasing CrNic tended (linear,  $P = .09$ ) to have reduced ADG during the 59.0 to 81.6 kg phase and overall trial. Additionally, CrPic reduced growth ( $P = .02$ ) during the 81.6 to 104.3 kg phase when compared to controls. Barrows fed increasing CrNic had increased Hunter A:B ratios (quadratic,  $P = .07$ ). In Exp. 2, gilts fed CrPic had higher ADFI ( $P = .04$ ) during the 59.0 to 81.6 kg phase when compared to gilts fed the control diet; otherwise, neither source nor level of supplemental Cr affected ( $P > .15$ ) growth performance. However, gilts fed 50 ppb Cr as CrNic had numerically increased ADG and G/F. Gilts fed increasing CrNic had increased dressing percentage (linear, quadratic,  $P = .02$ ). Visual color of the longissimus muscle and saturation index were reduced (quadratic,  $P = .09$  and  $.05$ , respectively) with increasing CrNic. Gilts fed 200 ppb CrNic had increased dressing percentage ( $P = .10$ ) but lower visual color ( $P = .05$ ) of the longissimus muscle than gilts fed 200 ppb CrPic. Gilts fed CrPic had less marbling ( $P = .02$ ) of the longissimus muscle and reduced drip loss percentage ( $P = .08$ ) when compared to controls. Supplemental Cr was not effective in improving growth performance or carcass composition (average backfat or percentage lean) in barrows or gilts. However, further research should be conducted to evaluate lower concentrations of CrNic in finishing gilts.

**Key Words:** Chromium, Growth Performance, Carcass Characteristics