CE (7.89, 7.65, 7.72 Mcal ME/kg) and (5.84, 5.66, 5.71 Mcal NE/kg) basis, with no change ($P > 0.24$) in ADG (0.92, 0.93, 0.90 kg/d). From d 40 to 83, decreasing wheat particle size increased (quadratic; $P < 0.01$) ADG (0.92, 0.90, 0.95 kg/d), and improved (linear; $P < 0.01$) G:F (0.319, 0.322, 0.336) and CE (9.92, 9.83, 9.44 Mcal ME/kg and 7.45, 7.38, 7.08 Mcal NE/kg), with no change ($P > 0.23$) in ADFI (2.87, 2.80, 2.84). Overall from d 0 to 83, reducing wheat particle size improved (linear; $P < 0.01$) G:F and CE on both an ME and NE basis, with no difference in ADG or ADFI. Fine grinding wheat was detrimental to feed intake in early finishing but improved ADG in late finishing and G:F for both periods and overall.

Key Words: finishing pig, particle size, wheat

Table 0758. Effects of hard red winter wheat particle size on finishing pig growth performance and caloric efficiency

	Wheat particle size, µm				Probability $P <$	
d 0 to 83,	728	579	326	SEM	Linear	Quadratic
ADG, kg	0.92	0.91	0.93	0.01	0.47	0.50
ADFI, kg	2.59	2.53	2.53	0.03	0.13	0.43
G:F	0.354	0.361	0.367	0.002	0.01	0.82
Caloric efficiency, Mcal/kg gain						
ME	8.94	8.76	8.62	0.06	0.01	0.75
NE	6.67	6.53	6.43	0.05	0.01	0.75

0759 The effects of dietary zinc oxide and chlortetracycline on nursery pig growth performance.

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A total of 240 weaned pigs (PIC 1050; initially 6.08 ± 0.60 kg) were used in a 47-d study to compare the effects of added Zn from ZnO, alone or in combination with a low or high dose of chlortetracycline (CTC) on nursery pig growth performance. Pigs were allotted to pens at weaning (d 0) and fed a common starter diet with no antimicrobial for 5 d before the start of the experiment. On d 5, pens of five pigs were allotted to one of six dietary treatments, balanced on average pen weight in a randomized complete block design with eight replications per treatment. Dietary treatments were arranged in a 2 × 3 factorial with main effects of added ZnO (0 vs. 2500 ppm of Zn) and CTC (0, 55, or 441 mg/kg feed). Pigs were fed experimental diets from d 5 to 26 after weaning followed by a common corn-soybean meal-based diet without antimicrobial from d 26 to 47. Pigs on the 55 mg/kg treatment received CTC continuously from d 5 to 26; however, to comply with FDA guidelines, CTC was removed from the diets of pigs fed 441 mg/kg CTC on d 15, then added again from d 16 to 26. All diets contained at least 110 ppm of Zn from ZnO in the trace mineral premix. No ZnO × CTC interactions were observed. Pigs fed added ZnO had increased ($P = 0.001$) ADG, ADFI, and BW during the treatment period but decreased G:F ($P = 0.025$) from d 26 to 47 when a common diet was fed. Overall (d 5 to 47), pigs fed added ZnO had increased ($P < 0.05$) ADG and ADFI. Pigs fed CTC had increased (linear, $P < 0.05$) ADG, ADFI, and BW during the treatment period. Overall, pigs fed CTC tended to have increased (linear, $P < 0.10$) ADG and ADFI, but G:F tended (quadratic, $P = 0.070$) to increase then decrease as CTC increased. In summary, ZnO and CTC increased ADG and ADFI but had a minimal effect on feed efficiency.

Key Words: nursery pig, zinc, chlortetracycline

Table 0759. Effect of zinc oxide and chlortetracycline on pig growth

Added Zn, ppm	0	0	0	2500	2500	2500	
CTC, mg/kg	0	55	441	0	55	441	SEM
d 5 to 26							
ADG, g	355	378	386	397	397	417	7.9
ADFI, g	504	514	528	549	542	570	11.9
G:F	0.705	0.737	0.731	0.725	0.734	0.732	0.0128

0760 Efficacy of Biomin BBSH 797 to biotransform deoxynivalenol to the metabolite de-epoxy-deoxynivalenol in serum of pigs.

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The mycotoxin deoxynivalenol (DON) and its metabolites are important biomarkers to demonstrate the efficacy of DON deactivating products in vivo. The aim of this study was to prove the capability of Biomin BBSH 797 to detoxify DON to the metabolite de-epoxy-deoxynivalenol (DOM-1) in the gastrointestinal tract of pigs. Therefore, DON and DOM-1 were measured in the serum of pigs. A total of 124 weaned piglets (mixed sex, approx. 28 d) were adapted for 2 wk. After adaption, 24 animals were randomly assigned to three experimental groups, according to weight, gender and overall condition. Control group received no DON and no BBSH 797. The second group only received 2 µg/kg of naturally DON contaminated wheat and the third group received two µg/kg DON and 1.7 × 10^8 cfu BBSH 797/kg feed. During the experimental phase, piglets were fed restrictively twice a day. Serum samples of all animals in all groups were taken on four consecutive days. Sample 1 (blank serum sample) was taken before feeding the experimental diets. All other serum samples were taken 1.5, 4, 10, and 24 h after feeding the experimental diets. Serum samples were analysed for DON and DOM-1 concentrations by LC/MS-MS method. There were no significant differences in blank serum samples between the three groups. Due to the presence of DON in the standard diet, small amounts of DON and DOM-1 produced by the native intestinal flora were also found in the blank samples. On d 3 of the trial, DON concentration 1.5 h after feeding was more than four times higher in serum of the DON group compared to the control and the DON+BBSH group ($P = 0.02$). DOM-1 concentrations in serum (d 3, 1.5 h) were