

**177 Effect of supplementing a fatty acid-based product, Monomix, or pharmacological levels of zinc oxide on growth performance of nursery pigs.**

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Trials suggest short and medium chain fatty acids can be used as alternatives for ZnO; however, US studies are limited. Therefore, the objective of this study was to evaluate the effects of a short and medium chain fatty acid product (Monomix, Quality Technology International, Inc., Elgin, IL) added alone or in combination with pharmacological levels of ZnO on nursery pig performance. A total of 354 pigs (DNA 200×400, initial BW=5.9 kg) were randomized to pens (5 pigs/pen) and pens were allotted to 1 of 4 treatments with 18 replicates/treatment. Treatments were arranged in a 2×2 factorial with main effects of added ZnO (0 vs. 3,000/2,000/0 ppm of Zn in phases 1, 2, and 3 respectively) and Monomix (0 vs. 0.4% in phases 1, 2, and 3). Treatment diets were formulated in three phases fed from d 0 to 7, 7 to 18, and 18 to 35 post-weaning with all diets containing 110 ppm Zn from the trace mineral premix. Data were analyzed as completely randomized design using the PROC GLIMMIX procedure of SAS with pen as the experimental unit. No ZnO × Monomix interactions (P=0.399) were observed. Feeding Monomix decreased ADFI (P=0.002) and ADG (P=0.012) from d 0 to 7, resulting in decreased d 7 BW (P=0.015) but there was no evidence for other differences. Feeding ZnO from d 0 to 7 and 7 to 18, increased ADG (P< 0.001), ADFI, and BW, and improved G:F. Overall from d 0 to 35, pigs fed diets with added ZnO in phases 1 and 2 had increased (P< 0.05) ADG, ADFI, and d 35 BW, with no evidence for differences in performance in pigs fed diets with Monomix. The addition of Monomix failed to improve pig performance, whereas pharmacological levels of ZnO improved ADG and ADFI.

Table 1. Effect of supplementing a fatty acid-based product, Monomix, and/or pharmacological levels of zinc oxide on growth performance of nursery pigs<sup>1</sup>

Zinc oxide:	No	No	Yes	Yes		Probability, P=		
Monomix <sup>2</sup> :	0%	0.4%	0%	0.4%	SEM	Interaction	Monomix	ZnO
d 0 to 35								
ADG <sup>3</sup> , g	365.6	373.9	392.7	386.1	16.21	0.399	0.922	0.029
ADFI, g	511.1	512.9	541.6	529.7	27.03	0.560	0.667	0.047
G:F	0.717	0.729	0.725	0.729	0.009	0.485	0.207	0.494
BW d 35, kg	18.7	19.2	19.7	19.6	0.52	0.369	0.587	0.025

<sup>1</sup>A total of 354 pigs (DNA 200 × 400, initial BW = 5.9 kg) were used in a 35 d growth study.

<sup>2</sup>Monomix, Quality Technology International, Inc., Elgin, IL

<sup>3</sup>ADG = average daily gain. ADFI = average daily feed intake. G:F = feed efficiency. BW = body weight.

**Keywords:** nursery pig, short and medium chain fatty acids, zinc oxide