on-farm.

Key Words: computer training, pig welfare, timely euthanasia
doi: 10.2527/asasmw.2017.086

087 Determining the phosphorus release for Natuphos E 5000 G phytase for nursery pigs. K. M. Gourley*, J. C. Woodworth, J. M. DeRouchey, M. D. Tokach, S. S. Dritz, R. D. Goodband, *Kansas State University, Manhattan.*

A total of 286 pigs (PIC 327 × 1050; initially 11.1 ± 0.1 kg, and d 42 of age) were used in a 21-d growth trial to determine the available P (aP) release curve for a novel phytase source (Natuphos E 5000 G, BASF Corporation, Florham Park, NJ). Pigs were randomly allotted to pens at weaning. On d 0 of the experiment (d 18 after weaning), pens were allotted in a randomized complete block design to 1 of 8 treatments. There were 4 pigs/pen and 9 pens/treatment. Pigs were fed a corn-soybean meal-based diet formulated to 1.25% standardized ileal digestible Lys. Experimental diets were formulated to contain 0.64% Ca and increasing aP supplied by either monocalcium P (0.12, 0.18, and 0.24% aP) or from increasing phytase (150, 250, 500, 750, and 1000 FTU/kg) added to the 0.12% aP diet. Diets were analyzed for phytase using the AOAC method, and analyzed concentrations were 263, 397, 618, 1100, and 1350 FTU/kg, respectively. On d 21 of the study, 1 pig per pen was euthanized, and the right fibula was collected for bone ash and percentage bone ash calculations. From d 0 to 21, increasing P from monocalcium P or increasing phytase improved (linear, $P < 0.01$) ADG and G:F. Bone ash weight and percentage bone ash increased (linear, $P < 0.01$) with increasing monocalcium P or phytase. When formulated phytase values and percentage bone ash are used as the response variables, aP release for up to 1000 FTU/kg of Natuphos E 5000 G phytase can be predicted by the equation aP release = 0.000212 × FTU/kg phytase.

Key Words: nursery pig, phytase, bone ash
doi: 10.2527/asasmw.2017.087

088 Effects of cow-calf production system and post-weaning management on finishing performance and carcass characteristics of calves produced from an intensively managed cow-calf production system. S. E. Gardine*, *University of Nebraska, Lincoln.*

Research has indicated that corn residue grazing can be integrated into a partial intensively managed cow-calf production system. Furthermore, post-weaning management can affect finishing performance, as well as carcass characteristics of beef cattle. The objective of this study was to evaluate the effects of cow-calf production system and post-weaning management on finishing performance and carcass characteristics of calves produced from an intensively managed cow-calf production system. Cows with summer-born calves at side were wintered either in a dry-lot or on cornstalks. Cow-calf pairs in the dry-lot were fed a distillers and corn residue based diet formulated to maintain a lactating cow. Cow-calf pairs grazing cornstalks were supplemented with distillers based cubes at a rate designed to provide the cornstalk grazing pairs with an equivalent energy intake to that of the dry-lot pairs. Following the cornstalk grazing period from November to mid-April, all calves were weaned and received into the feedlot. Calves ($n = 47$; BW = 265 44 kg) were allocated by previous cow-calf production system, stratified by initial BW, and assigned randomly to one of four treatments with two replications per treatment. The trial was designed as a 2 × 2 factorial. Treatment factors included 1) cow-calf production system: dry-lot feeding (DLOT) or cornstalk grazing (STALK) and 2) post-weaning management: finishing (FINISH) or pre-finishing growing (GROW). In the FINISH treatment, weaned calves were directly adapted to a finishing diet (50% HMC, 30% sweet bran, 10% MDGS, 5% wheat straw, and 5% supplement). Calves in the GROW treatment were placed on a growing diet (30% Sweet Bran, 35% MDGS, 31% wheat straw, and 4% supplement) for 79 d before being adapted to the same finishing diet. Cattle were fed to a common compositional endpoint, and 12th rib fat thickness did not differ among treatments ($P > 0.70$). No cow-calf production system by post-weaning management interactions ($P > 0.22$) were observed for finishing performance, nor was there a cow-calf production system effect on finishing

Table 087.

	Inorganic P, % aP			Phytase, FTU/kg					
Item	0.12	0.18	0.24	150	250	500	750	1000	SEM
BW, kg									
d 0	11.2	11.1	11.1	11.0	11.1	11.1	11.2	11.2	0.19
d 21[1,4]	20.4	22.3	23.3	21.3	21.6	21.7	22.6	23.3	0.38
d 0 to 21									
ADG, g[1,4]	436	537	583	487	495	504	544	576	13.3
ADFI, g[1,4]	860	936	981	916	902	897	968	971	21.3
G:F, g/kg[1,2,4]	505	573	595	532	546	561	560	592	9.4
Bone ash weight, g[3,4]	0.680	0.850	0.855	0.713	0.667	0.772	0.821	0.941	0.044
Bone ash, %[3,4]	38.2	41.2	42.0	38.7	39.6	41.2	43.1	45.5	0.99

[1]Inorganic linear: $P < 0.001$; [2]Inorganic quadratic: $P < 0.05$; [3]Inorganic linear: $P < 0.05$; [4]Phytase linear: $P < 0.001$.