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The Addition of Mannan Oligosaccharides to Nursery Pig Diets Improves Performance.

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The objective of this trial was to measure the effect of the addition of Mannan Oligosaccharides (MOS) to swine nursery diets on pig performance. MOS are believed to bind and suppress enteric pathogens in the gut, and have been shown to increase the growth rate of nursery pigs. MOS are derived from the cell wall of *Saccharomyces cerevisiae* yeast. This trial was conducted at the Vita Plus Swine Nursery Research Center in a cooperative effort with Prince Agri-Products. The trial was conducted as a randomized complete block design with six replications per treatment. A total of 234 weaned pigs (approximately 21 days of age; mean body weight = 12.17 lb) were used in a 49-day trial in a 30-pen nursery facility (13 pigs per pen). Pigs were randomly allotted to one of three dietary treatments based on initial body weight. Treatments were: 1) Standard four-phase nursery diet sequence with no MOS added; Control, 2) As 1 with MOS (Prince SAFmannan®) supplemented at 3, 2, and 1 lb/ton in diet phases I, II and III, respectively; 3,2,1 MOS, and, 3) As 1 with MOS (SAFmannan®) supplemented at 6, 4, and 2 lb/ton in diet phases I, II and III, respectively; 6,4,2 MOS. All diets fed throughout the 49-day trial period contained antibiotics. Diet phases I (pellet), II (pellet), III (meal), and IV (meal) were offered from day 0 to 8, 8 to 15, 15 to 26, and 26 to 49, respectively. A common diet was fed during the period from day 26 to 49. Individual pigs were weighed on days 0, 26, and 49, and pen weights were taken on day 8, 15, and 21. Feed disappearance was measured on each weigh day to enable calculation of ADFI and F/G. Pigs that perished or were removed from test were weighed and reason for removal was recorded. Data were analyzed using GLM and ANOVA procedures. Pigs fed diets containing MOS tended to be heavier (+1.17 lb for 3,2,1 MOS; P = 0.08, and +1.03 lb for 6,4,2 MOS; P = 0.12) on day 49 of the trial than pigs consuming the Control diets (62.76 lb BW). There were no significant treatment differences with respect to body weight on weighing intervals prior to 49 days. ADFI was numerically (P > 0.15) higher from day 0 to 49 for pigs consuming either of the MOS treatment diets compared to pigs fed diets containing no MOS. ADFI was numerically higher from d 0 to 8 for pigs consuming the diets containing MOS (P = 0.15 for 3,2,1 MOS and P > 0.15 for 6,4,2 MOS) as compared to pigs fed diets containing no MOS. However, from day 8 to 15 pigs consuming diets containing no MOS had higher (P < 0.05) ADFI than pigs consuming treatment diets with either level of MOS. Pigs fed the Control diet from day 8 to 15 also had greater (P = 0.10) ADG than pigs fed the 6,4,2 MOS diet, but similar ADG to pigs fed the 3,2,1 MOS diet. ADG tended to be higher from day 26 to 49 for pigs consuming the 3,2,1 MOS treatment diets (P = 0.10) and was numerically (P > 0.15) higher for pigs fed the 6,4,2 MOS treatment diets compared to pigs fed the Control diets. For the period from day 0 to 49, pigs fed the diets containing 3,2,1 MOS (P = 0.08) and 6,4,2 MOS (P = 0.12) tended to have greater ADG than pigs fed the Control diets. F/G was similar among all treatments during the 49-day trial. There was no treatment effect on pig removal during the trial. In this trial, the addition of MOS to nursery diets increased the growth rate of nursery pigs, specifically, during the late nursery diet phase after MOS was removed. Furthermore, it was found that the higher levels of MOS did not provide a performance advantage over the lower levels of MOS, and therefore, economics favored the inclusion of 3, 2, and 1 lb/ton MOS in nursery diet phases I, II, and III, respectively.

[a,b] Means within a column lacking common superscripts differ P < 0.10.

[†] End Weight and ADG differences for 6,4,2 MOS compared to the Control approached significance (P = 0.12).

Summary of the effects of the addition of MOS to nursery pig diets on growth performance.

	Day 0 to 49				
Treatment	**Start Weight, lb**	**End Weight, lb†**	**ADFI**	**ADG†**	**F/G**
Control	12.17	62.76[a]	1.574	1.032[a]	1.523
3, 2, 1 MOS	12.17	63.93[b]	1.612	1.057[b]	1.526
6, 4, 2 MOS	12.17	63.79[ab]	1.617	1.053[ab]	1.534