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## Successful weaning of piglets without AGPs using a combination of acidifier and phytogenics

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Mortality, morbidity and depressed pig performance associated with disease during the early post-weaning period continue to be major problems of the swine industry. Currently, the majority of the U.S. swine industry relies on the inclusion of sub-therapeutic levels of in-feed antibiotics in order to promote growth and mitigate disease problems. However, increased concerns about the use of antibiotic growth promoters (AGPs) and the recent ban of those in Europe have led to research on natural growth promoters. A trial was conducted at the Texas A&M University in Kingsville. This trial investigated the effect of replacing an AGP in the feed with an acid blend consisting of phosphoric, lactic, citric and sorbic acid on a sequential release medium (Biotronic<sup>®</sup>) and a phytogenic based on essential oils and prebiotics (Biomin<sup>®</sup> P.E.P.) on the performance of weaned pigs. Weaned, crossbred piglets (n=144) were assigned by litter, gender and weight to one of two treatments. Piglets were fed standard nursery diets containing either 1% AGP (Control) or the acidifier (0.3%) and the phytogenic (0.2%) over two 28-d nursery periods (starter NI = d 1 to 28 and grower NII = d 28 to 56 post-weaning). Daily feed consumption and refusal were recorded throughout the experimental period and average daily feed intake (ADFI) was calculated. Individual piglet weights were obtained at weekly intervals and average daily gain (ADG) and gain:feed ratios were calculated. Data were subjected to ANOVA for repeated measures and specific treatment comparisons were made using Fisher's Protected Least Significant Difference. Pigs fed control and treatment diets had similar weights ( $P > 0.10$ ) at the end of the NI and NII periods ( $14.8 \pm 0.6$  vs.  $14.4 \pm 0.5$  and  $30.5 \pm 1.0$  vs.  $30.4 \pm 0.8$  kg, for Control and treatment, respectively). Feeding Biotronic<sup>®</sup> and Biomin<sup>®</sup> P.E.P. increased ADFI ( $P < 0.05$ ) during both nursery periods ( $0.50$  vs.  $0.55$  and  $1.28$  vs.  $1.34$  kg/d during NI and NII for control vs. treatment, respectively), and resulted in similar ( $P > 0.10$ ) levels of performance as measured by ADG ( $277 \pm 16$  vs.  $279 \pm 15$  and  $563 \pm 18$  vs.  $572 \pm 12$  g/d during NI and NII for control vs. treatment, respectively) and gain:feed ratios ( $0.59 \pm 0.09$  vs.  $0.54 \pm 0.03$  and  $0.45 \pm 0.02$  and  $0.45 \pm 0.02$  during NI and NII for control vs. treatment, respectively). Of particular importance, feeding the acid-phytogenic additive substantially reduced ( $P < 0.05$ ) the mortality rate during the NI period ( $16.4$  vs.  $8.5\%$  for control vs. treatment, respectively), resulting in lowered production cost and an increased net return per pig ( $\$5.80$  vs.  $\$ 2.94$ , respectively). Results from piglets used in this study indicate that replacement of in-feed antibiotics with an acid-phytogenic blend of natural products (acidifier Biotronic<sup>®</sup> and phytogenic Biomin<sup>®</sup> P.E.P.) maintains performance in weaned piglets. In addition, these products appear to be more effective than the antibiotic in reducing mortality due to post-weaning scours, which improves economic return.