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## Effect of a Non-antibiotic Feed Additive (Royal Nutrazyme™) on Nursery Pig Performance

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# Effect of a Non-antibiotic Feed Additive (Royal Nutrazyme™) on Nursery Pig Performance

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### Summary and Implications

Profitable pork production revolves around increasing average daily gain and feed efficiency and decreasing mortalities. Many health products exist to aid the pork producer in achieving a high health status herd. Antimicrobial products such as Mecadox® are traditionally utilized in the nursery phase. New non-antimicrobial derived products such as oregano oil are also entering the market. To determine the efficacy of these two products a trial was carried out at Iowa Lakes Community College. Four groups of pigs were monitored for growth rate, feed consumption and morbidity. Through the nursery phase, both products improved growth rate over a non-medicated control diet.

### Introduction

Antibiotics have been in use for more than forty years as feed additives to promote growth rate and feed efficiency. However, consumers are increasingly concerned about how the use of antimicrobials in livestock production may impact food safety. Investigations into alternatives to feeding antibiotics to swine are gathering interest. A small segment of consumers are willing to pay more for pork from pigs not fed antibiotics. Some niche market producers eliminate or reduce the feeding of antibiotics to differentiate their product and to obtain a premium price.

### Materials and Methods

Four groups of pigs entered a nursery between December 2002 and March 2003. Trials one and two were weaned into a hot nursery consisting of six pens. At mid test these pigs were weighed and moved to a six pen cold nursery. Trial three encountered management and protocol changes and is therefore not included in the results presented. Pigs from trial four were weaned directly into the cold nursery. Beginning and ending nursery weights were recorded for all trials. Market weights were recorded for trials 1 and 4; trial 2 pigs were sold upon exiting the nursery as feeder pigs. Pigs were weaned at ages ranging from 12 to 28 days according to the facility production flow. Three treatments were randomly assigned across six pens for each trial. Litters were allocated uniformly across

treatments equalizing starting weight and barrow to gilt ratio within each pen. A total of 302 pigs were included in the trials.

Feed was processed at a local feed mill; the base diet was formulated and mixed for all pigs. One-third of the base diet was bagged with no antibiotic added (control); 1/3 of the diet received 50g/ton Mecadox® and the remaining 1/3 of the diet received 3 lbs/ton Royal Nutrazyme™ powder. All commercial diets used in the trials met or exceeded NRC nutrient requirements. Pigs were fed up to 4 lbs of starter crumbles containing 1.7% lysine. Pigs were then fed 5 lbs of a 1.6% lysine starter diet. The first two diets were complex nursery diets containing dried blood plasma, dried whey, and fish meal. Approximately 14 pounds of a 1.4% lysine phase two diet was fed and then the trials were finished on a 1.25% lysine phase three diet.

### Results and Discussion

In the first and second halves of the nursery phase, pigs consuming Mecadox grew faster than non-medicated control diets, but no differently than Royal Nutrazyme™ powder diets ( $P < .05$ ). Pigs fed Royal powder were not significantly different in daily growth rate from pigs fed control or Mecadox diets. Overall through the nursery phase, pigs fed Royal powder grew at the same rate as Mecadox, but both grew faster than control diets. Additionally, no significant growth differences were detected between the nursery treatments impact on finish performance. Morbidity throughout the trials varied greatly by treatment with Mecadox having the least and the control having the greatest.

Immune challenges and feeding protocols differ by farm thus individual operations must exercise caution when applying these results to all farms.

### Acknowledgements

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**Table 1. Average Daily Gain.**

Treatment	Wean to midtest	Midtest to end nursery	Wean to end nursery	Wean to market	Nursery to market
Mecadox®	0.71 <sup>a</sup>	1.36 <sup>a</sup>	0.88 <sup>a</sup>	1.59	1.80
Control	0.54 <sup>b</sup>	1.14 <sup>b</sup>	0.73 <sup>b</sup>	1.44	1.65
Royal™	0.60 <sup>ab</sup>	1.25 <sup>ab</sup>	0.82 <sup>a</sup>	1.51	1.71