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Research Report for Field Evaluation of Termin-8 Treated Swine Feeds

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INTRODUCTION:

Termin-8 justification as a tool for the Food Animal Production Industry is coming to application in the U.S. as H.A.C.C.P. is being used by food processing plants. Reduction in the cases of *Salmonella sp.* in both chicken and turkey flocks by poultry producers, is expected to be duplicated by swine producers in the U.S.

Anitox Corp of Buford Georgia, U.S.A. has received FDA approval for use of Termin-8 to be aerosol sprayed into all animals feeds and feed ingredients as of October 1998. Termin-8 is a chemical feed treatment that contains formaldehyde as one of its bactericidal components.

The current consumer and producer concerns of antibiotics in animal feeds causing resistant bacteria besides *Salmonella sp.* contamination of human foodstuffs have created the valued added from Termin-8 in animal foodstuffs. This product will prevent feed from being recontaminated with *Salmonella sp.* bacteria for 21 days after feed manufacture.

Recent decisions of several governments to ban the use of growth promoting antibiotics eliminate any preservative effects that the drugs may have provided. It is important to note that if feeds are not pelleted or extruded they can carry very high levels of pathogenic bacteria. This is a challenge on the animal's immune system not commonly recognized by the industry.

Previous studies confirm that the effects of feeding Termin-8 treated feeds can reduce animal mortality and increase animal performance. A poultry breeder flock trial in England measured 23% and 41% improvement in mortality of males and females respectively. Increases of chicks/bird were 12.6% and hatchability improved 1.5% in the same study.

SWINE: TERMIN-8 FEEDING EXPERIMENT

It is expected that Termin-8 treated feeds tested against non-medicated feeds in Early Weaned Pigs will give significant improvement in average daily gain and feed conversion.

Objective:

This trial is designed to find the most cost effective feed treatment level of Termin-8 in nursery/grower pigs.

Trial Format:

Early weaned pigs will be supplied a medicated pelleted prestarter diet for one week during acclimatization after delivery to the Anitox Corp. Research Farm. The pig ration will be changed twice during the 8-week nursery-growing period. This will meet current feed technology for maximum average daily gain performance. The last two diets will be a crumble form of feeds containing three (3) different levels of Termin-8. The Anitox Corp. nursery has been converted to 22 pens with identical nursery feeders and two- (2) water nipples/pen. The test period season will be summer in the Atlanta Georgia vicinity. When the pigs have an average weight of 50 pounds, they will be transferred to contract finishing floors.

ANIMAL HUSBANDRY:

The pen distribution will be blocked for each treatment group to eliminate location and environmental effect on animal growth and performance.

Pigs will be sized by pen and each treatment and control group will have equal numbers of the same sized pigs. The 8 largest and 8 smallest pigs delivered will not be included in the trial.

The pigs are modern high lean genetics and will weigh approximately 10-12 pounds upon delivery. The test population will be 160 mixed sex pigs divided into each of 20 pens in the barn (8 pigs/pen). The 16 remaining pigs will be used to draw from for replacements if any

deaths occur during the first week in the barn.

Prestarter feed will come from the Purina Mills site in Wilson North Carolina. Each of four (4) test groups will have 5 pens of eight (8) pigs for a total of forty (40) pigs. There will be three treatment levels of Termin-8: 2 pounds/ton, 4 pounds/ton and 6 pounds/ton to be compared to control (non-treated or medicated) feed. Anitox Corp. using the blue colored 200-pound capacity mixer with vacuum air atomization application (negative pressure instead of positive pressure) will prepare the feed treatments with Termin-8. Chemistry distillation on each batch of treated feed each week will be used to confirm feeding group integrity.

ANIMAL PERFORMANCE:

Experimental unit is the pen population for feed conversion and the pig is the unit measured for average daily gain.

The pigs will be observed twice daily during the routine chore time periods and changes in health will be recorded. Any evidence of non-formed stools will be recorded by pen each day of the trial.

Each week individual pen feeders will be weighed with remaining feed, emptied and brushed clean (not washed). Weekly feed added less feed remaining on weighing day would represent the feed used by the pen of pigs on a weekly basis. This will be used to calculate the feed conversion for the pen.

The pigs will be weighed individually each week to record body weight that can be used to calculate their average daily gain.

RESULTS:

The table of data will be presented at the presentation, due to the completion date of the trial being September 1, 1999.