

FMC Corporation
Animal Nutrition
3415 Hwy 95
Parma, Idaho 83660



University of Minnesota Turkey Research{PRIVATE }
June, 1990

The objective of this experiment was to evaluate increasing levels of phosphorus and phosphorus source on the performance of turkey poults. Three levels of phosphorus supplementation were used, 90%, 110% and 130% of the NRC phosphorus recommendation. The three sources of phosphorus supplementation evaluated were: dicalcium phosphate, monocalcium phosphate and XP4, monosodium phosphate.

This study was run from May to September of 1989 using Nicholas White male poults. The experiment was done at the University of Minnesota Turkey Research Unit in Rosemount, Minnesota. The study was done under the direction of Dr. Paul Waible.

The younger poults were most sensitive to phosphorus supplementation. At 3 weeks of age, the 90% phosphorus from XP4 poults showed significantly better performance. This advantage lasted until 9 weeks. Increasing levels of phosphorus to 130% of NRC recommendations decreased performance regardless of phosphorus source. At the end of 18 weeks, there was no significant difference in performance between dicalcium phosphate and XP4. This study indicated that the best response from XP4 is during the first 9 weeks and that the phosphorus level should be between 90% and 110% of the NRC recommendations.

There were no significant differences in bone density between the dicalcium phosphate and the XP4. However, at the 110% phosphorus level the bone density in the XP4 poults was better. This also corresponded with the decreased mortality, 0% for the XP4 and 3.3% for the dicalcium phosphate.

A secondary objective of this study was to evaluate the dietary electrolyte balance on performance. Specifically, the possibility of sodium loading from XP4 was addressed. A treatment was included using S-Carb to provide equal sodium to the XP4 treatment with dicalcium phosphate as the phosphorus source. There was no detrimental effect from the sodium level in the XP4 diets.

The complete report will be presented at Poultry Science Meeting 1990, as "**Alternative Phosphorus Sources for Turkeys.** J.K. Liu, P.E. Waible, C.W. Carlson and W.J. Plocher."

W.J. Plocher, Commercial Development Manager
(800)356-4657 FAX (208)674-1044 e-mail: wendy_plotcher@FMC.com