

A COMPARISON OF VARIOUS LEVELS OF THREE SOURCES OF PHOSPHORUS FOR LAYING HENS IN FLOOR PENS

EXPERIMENT 2 (1958-59)

Procedure.—Twenty pens, each containing 39 commercial egg production type pullets (Hy-line 934A) per pen, were used in this experiment. These pullets were reared in confinement and were “full-fed” a grower diet containing 17 percent protein and 945 Calories of productive energy per pound of feed. This grower diet contained approximately 1.2 percent calcium and 0.7 percent total phosphorus. The pullets were moved into the laying house at 161 days of age at which time they were randomly assorted into the 20 pens.

All pullets were intraocularly vaccinated for bronchitis and Newcastle disease at one day of age and again at 12 weeks of age. At 8 weeks of age, pullets received fowl pox vaccination by the wing web method. Birds were “dubbed” at 1 day of age and “debeaked” at 8 weeks of age.

Each floor pen contained 120 square feet of floor space, which allowed approximately 3 square feet for each pullet. Wood shavings were used as litter. Each pen was equipped with one bell-type automatic waterer, 1 4-foot feed trough, and 9 individual nests.

The composition of the basal diet used in this experiment is shown in Table 1. This basal diet was modified to form the other 9 experimental treatments as shown in Table 3. These experimental diets included the use of 3 levels of phosphorus derived from 3 sources. It also included a positive control containing 3 percent fish meal. This positive control diet was included to test whether the “all vegetable” basal diet would support a maximum rate of egg production. The calcium content of the experimental diets was maintained at 2.3 percent by varying the amount of ground limestone in the diet in order to compensate for the additional calcium furnished by the phosphorus supplement. All experimental diets contained approximately 17 percent protein and 945 Calories of productive energy per pound of feed. This level of protein and energy was maintained by varying the amount of corn, animal fat, and soybean meal in the diets.

Egg production and feed efficiency calculations were identical to the procedure followed in Experiment 1.