

the New Hampshire pullets. Wood shavings were used as litter. Each pen was equipped with one bell-type automatic waterer, 2 4-foot feed troughs, and 12 individual nests.

The composition of the basal diet used in this experiment is shown in Table 1. This diet was modified to form 5 experimental treatments as shown in Table 2, by using various sources and combinations of phosphorus supplements. Experimental diets were kept iso-nitrogenous by varying the amount of corn and soybean meal used in the diet. No attempt was made to keep diets iso-caloric since this would have entailed the use of animal fat, and it was felt that fat might alter the level of phosphorus required by the hen.

Daily collections of eggs were made and the total number of eggs per pen was recorded. At the end of each 28-day period² rate of egg production and pounds of feed required to produce a dozen eggs were calculated. Rate of egg production was calculated on a hen day basis.

At approximately bi-monthly intervals the specific gravity of all eggs produced for three successive days was determined. However, for this presentation only the average of the specific gravity for all eggs measured is given. This experiment was conducted for a period of 10 months.

Results.—Source of supplemental phosphorus in the diet of New Hampshire pullets did not affect rate of egg production (Table 2). However, a wide variation in rate of egg production was found when White Leghorn pullets were fed these experimental diets. As the level of soft phosphate was increased in the diet of White Leghorn pullets, a reduction in rate of egg production was obtained. The lowest rate of egg production was obtained with the pullets receiving the diet containing soft phosphate as the sole source of supplemental phosphorus. Since replicate pens of each breed were not fed the experimental diets, significance of differences between the experimental treatments could not be measured.

As the level of soft phosphate was increased in the diet of the White Leghorn pullets, the amount of feed required to produce a dozen eggs was increased (Table 2). However, when the same diets were given to the New Hampshire pullets no difference was found in the amount of feed required to produce a dozen eggs. It should be pointed out that when soft phosphate was included

² For convenience of presentation in this bulletin the 28-day period will be referred to as a month.