a deficiency of phosphorus. The fact that these diets were deficient in calcium is substantiated by the report of Durham *et al.* (1960) who states that in diets supplemented with soft phosphate, the calcium requirement is in excess of 2.25 percent. The fact that the New Hampshire pullets in Experiment 1 (Table 2) were able to maintain maximum rate of egg production with diets containing high levels of soft phosphate, whereas, the White Leghorns receiving the diets containing high levels of soft phosphate performed at a lower rate of production, indicated that calcium was the limiting factor, and that the availability of phosphorus was not the cause for the decreased rate of egg production. This would point out the necessity of increasing the calcium level of the diet when soft phosphate was used in order to compensate for the lowered availability of the calcium in the supplement.

The calcium-phosphorus ratio does not appear to be critical in diets for laying hens. Feeding extremely high levels of calcium (5.5 percent) or phosphorus (0.80 percent total phosphorus) when the other mineral was deficient did not appear to alter the performance of the hen (Tables 5 and 6). These data would indicate that the laying hen does not react the same as the chick to varying the calcium-phosphorus ratio, as it has been shown that widening the calcium-phosphorus ratio with low levels of phosphorus will decrease growth rate of chicks (Vandepopuliere *et al.*, 1961). Therefore, varying the level of either of these minerals in a practical laying diet would not alter the requirement for the other mineral.

The corn-soybean type diet employed in Experiments 2 through 6 appears to be adequate for assessing the phosphorus requirement of the laying hen and should be adequate for comparing the relative values of different supplemental phosphorus sources for laying hens. The results obtained with this basal diet also indicate that this diet will support a maximum rate of egg production, and may be used in evaluating the protein and amino acid requirements of the laying hen as well as evaluating the phosphorus requirement.

SUMMARY

Six experiments were conducted to evaluate the phosphorus requirement of the laying hen, and to compare the relative value of dicalcium phosphate, defluorinated phosphate and soft phosphate as sources of phosphorus for the laying hen.