

Results from these experiments indicate that: (1) An "all vegetable" diet containing 0.34 percent total phosphorus was deficient in phosphorus for the laying hen. This basal diet may be used for measuring the phosphorus requirement of the laying hen and for comparing the feeding value of various sources of supplemental phosphorus. (2) A level of approximately 0.40 percent phosphorus was required for the commercial egg production type pullet maintained in floor pens and fed a corn-soy-bean meal type diet. The requirement of hens maintained in cages appeared to be in excess of this level, and may be near 0.60 percent of the diet. (3) The phosphorus content of the diet did not affect egg shell quality as measured by specific gravity of eggs or thickness of egg shells. (4) Defluorinated phosphate, dicalcium phosphate, and soft phosphate were found to be satisfactory sources of phosphorus for the laying hen. However, the inclusion of high levels of soft phosphate in the diet with total calcium levels of 2.25 percent or less resulted in a reduction in egg production. It is concluded that this reduction in rate of egg production was not attributed to the lowered availability of the phosphorus, but was caused by a calcium deficiency resulting from the lowered availability of calcium in the soft phosphate. (5) Calcium-phosphorus ratios, within the range studied in these experiments, did not affect the performance of the hen when measured by rate of egg production or thickness of egg shells.

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