

intake. The lowest daily energy intake was noted with the 9/940 diet. No difference was noted when the level of protein was increased from 20 to 25 percent with this level of energy.

Increasing the level of productive energy from 700 to 940 Calories per pound resulted in lowered daily energy intake. However, a further increase to 1180 Calories resulted in a daily energy intake equal to that observed from feeding diets containing 700 Calories of productive energy per pound.

Increasing the level of protein at either of the three levels of energy resulted in an increase in daily intake of protein (Table 7). A decreased daily intake of protein was noted when the level of energy was increased from 700 to 940 Calories of productive energy per pound, and a further reduction was noted when the level of energy was increased to 1180 Calories.

Age at first egg ranged from 160.0 days for pullets receiving the 20/1180 diet to 179.4 days for pullets receiving the 9/940 diet (Table 5). Each increase of protein at a given energy level resulted in decreasing age at first egg. The effect of energy level upon age at first egg was not so clearly defined. Increasing the level of energy when the diet contained 9 percent protein resulted in increasing age at first egg. Energy level of the diet did not affect age at first egg when the diets contained 12 percent protein. Increasing the energy level when the diet contained 16 or 20 percent protein tended to decrease age at first egg.

**Layer phase.**—Rate of egg production, calculated at 28-day intervals, for the pullets grown on the various diets, is shown in Table 8. The highest rate of production for the 336-day laying period was 68.4 percent for the pullets receiving the 20/1180 grower diet, and the lowest rate was 64.9 percent for the group of pullets which received the 9/940 grower diet. However, statistical analysis of total number of eggs for the year revealed no significant difference in rate of lay among any of the 10 experimental groups.

During the first 28-days in the laying house (21-25 weeks of age) the level of protein which the pullets received in the grower diet significantly affected the number of eggs produced. The higher the level of protein in the grower diet, at given level of energy, the more eggs the pullet laid during the first month. The effect of energy level in the grower diet upon number of eggs laid during the first 28-day period was not nearly so clearly defined. During the second 28-day period all groups were producing at approximately the same rate except the groups which