

Research Note

COMPARISON OF DIFFERENT LEVELS OF CRUDE PROTEIN IN LAYING DIETS¹

The objective of these studies was to determine the minimum levels of crude protein required by laying hens.

Three studies were conducted using Leghorn hens housed in individual wire cages. Individual production, egg weight, and feed consumption data were recorded. In studies 1 and 2, three levels of protein (18, 15, and 12%) were compared without control of the feed caloric content (table 1).

In study 3, all hens previously used in studies 1 and 2 were sorted at

TABLE 1.—Average egg production and utilization of feed by layers in studies 1 and 2¹

Diet	Diet content		Study 1		Study 2	
	Protein	Calories	Laying rate ²	Feed conversion	Laying rate ²	Feed conversion
No.	%	Per lb		Lb feed/ doz eggs		Lb feed/ doz eggs
1	18	1190	69.0 a ³	3.12 a	79.9 ab	3.12 a
2	18	990	74.4 a	3.26 a	79.0 ab	3.75 ab
3	18	970	65.5 ab	3.66 a	77.3 ab	3.58 ab
4	15	990	64.7 ab	3.63 a	84.5 a	3.36 ab
5	15	980	64.3 ab	3.60 a	85.0 a	3.37 ab
6	12	990	54.4 b	4.37	73.4 b	3.84 b

¹ Studies conducted at the Lajas Substation: 1, from November 1968 to October 1969; and 2, from May to October 1969.

² Expressed as percent using the standard equivalent of a 2-oz egg.

³ Means followed by the same letter or letters are not different at the $P = .05$ level.

random into three groups and all were placed under a standard transition management using commercial feed. Subsequently, the three groups received their corresponding isocaloric experimental diet, but differing in protein content (table 2).

The results indicate a slight edge in laying rate and feed utilization by the hens receiving 18% compared to those receiving 15% protein diets. The results also indicate that a level of 12% was not adequate, and that some of the 18% protein diets were statistically superior to it.

The data tend to indicate that, from a practical standpoint, and under the environmental conditions of the Lajas area, a level of no less than 15% protein is needed. This confirms the work of Potter² and the

¹ Manuscript submitted to the Editorial Board August 25, 1975.

² Potter, L. M., Efficient levels of protein in poultry rations, *An. Nutr. Health*, Feb. 1970.

TABLE 2.—Average egg production and utilization of feed by layers in study 3 conducted at the Lajas Substation from January to April, 1970

Diet	Diet content		Laying rate ¹	Utilization of feed
	Protein	Calories		
<i>No.</i>	<i>%</i>	<i>Per lb</i>		<i>Lb feed/doz eggs</i>
1	18	980	67.8 a ²	3.52 a
2	15	980	61.9 a	4.06 ab
3	12	980	51.9	4.78 b

¹ Expressed in percent using the standard equivalent of a 2-oz egg.

² Means followed by the same letter or letters are not significantly different at the P = .01 level.

predominant commercial practice being used for feeding layers in Puerto Rico.

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