

Protein Intake of Laying Hens

two levels of protein in diet for laying hens compared in tests in southern California

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Hens in individual cages laid as well on a medium protein intake as on a diet with a high protein intake level during a six-month test on two ranches in the Pomona area.

Many southern California poultrymen using individual cage housing followed the practice of feeding 17% to 19% protein all mash rations and some poultrymen consistently fed rations containing 20% or more protein.

With two co-operating poultrymen a test was set up to make a comparison between rations containing about 16% and 19% protein. All conditions, including housing, age of birds and sources of stock, were as near the same for birds on each ration and on each ranch as was possible.

A total of 292 hens was used on each ration on the two ranches. On one ranch a two-row cage house of 448 4½-months-old White Leghorn pullets was used. Two small houses of 68 Rock-Leghorn Cross layers of different ages were used on the other ranch. Care was taken in this case to see that about equal numbers of birds of each of the several hatches were placed in each house.

The rations were compared for about six months, beginning early in June and ending early in December of 1949.

These rations were set up to utilize the

ingredients which were readily available and economical in price at the time the test was started. Neither were considered as ideal rations for all time, but both

should be examined periodically and changed to utilize low-cost ingredients.

The average egg production during the test period was 131.8 eggs per hen on the medium protein ration compared with 124.5 per hen for the high protein ration.

Culling and mortality were not widely different but the total of those that died and were culled was higher on the high protein ration on both ranches.

Feed consumption per bird was practically the same on both rations.

Feed cost was 18¢ per hundredweight higher for the high protein ration. Since feed cost was less and egg production was higher on the low protein ration, the feed cost per dozen eggs was lower by 2¢ as an average of the two ranches.

Care must be taken in drawing definite conclusions from a test of this type because it was conducted only in one area and under only two types of management and sources of stock. Different areas, different management, or different stock might give different results.

The results of this test have influenced many poultrymen in the Pomona area to change to a lower protein ration rather than to one with a higher protein level.

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Rations Used in the Test

	17% Medium	20% High
Barley	400	350
Milo	500	400
Corn	300	300
Fish meal (65%)	50	50
Meat meal (55%)	50	100
Soybean meal	200	300
Alfalfa meal	150	150
Wheat bran	300	300
Limestone	40	40
Shell, coarse. Fed in mash	40	40
Bone meal	20	10
Salt, iodized	10	10
D. act. Animal sterol	1	1
Fermentation by-product (2,000 mg. ribo. per pound)	1	1
Manganese sulfate	½	½
Total pounds	2062.5	2052.5
Total protein (calculated)	16.4%	19.24%
Total protein (actual)*	17.6%	20.1%
Per cent calcium	2.35	2.39
Per cent phosphorus82	.84
Vitamin A, I.U. per pound	5553	5581
Vitamin D A.O.A. C. per pound	440	442
Riboflavin mg. per pound	2.22	2.32

*Chemical analysis of four samples of each of the rations was made by the State feed laboratory. The samples were taken from the supply on the ranches during the last three months of the test.

Data from the Pomona Protein Intake Test

	Cooperator No. 1		Cooperator No. 2		Av. both ranches	
	Medium	High	Medium	High	Medium	High
Days of test	184	184	183	183		
Total number of hens	224	224	68.7	68.7		
Average number eggs laid per hen	123.6	119.6	139.9	129.4	131.8	124.5
Number died	18	15	1	0		
Number culled	32	44	14	16		
Number died and culled	50	59	15	16		
Average feed cost per cwt. (dollars)	3.95	4.13	3.82	4.00	3.89	4.07
Average feed cost per bird (dollars)	1.86	1.98	1.92	2.02	1.89	2.00
Average pounds feed consumed per hen	47.1	47.8	50.1	50.5	48.6	49.2
Feed cost per dozen eggs (cents)	18.1	19.9	16.4	18.7	17.3	19.3

SUGAR BEET

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per cent sugar between most of the plant spacing groups except that the closer spacings were usually slightly higher than the others, but this was not a significant difference. The extreme spacings of 16

inches did show a difference in sugar content in that all cases but two the average per cent sugar of all replications of the 16-inch spacings was lower than any of the other plant spacings in these tests. The yield in tons of sugar per acre of the 16-inch spacings was also lower than any of the other spacing groups.

The populations in the given spacing groups varied considerably depending upon the row width, ranch and the adherence to the distance set. The greatest variations were in the four- and six-inch groupings. The other groupings were all nearly uniform under similar conditions.

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