1981

Effect of Pelleting With And Without Aureomycin On Egg Production

A. B. Kashani
South Dakota State University

C. W. Carlson

EFFECT OF PELLETING WITH AND WITHOUT AUREOMYCIN ON EGG PRODUCTION

A. B. Kashani[1] And C. W. Carlson[2]

DEPT. OF ANIMAL SCIENCE REPORT
POULTRY 81-9

Pelleting of feed or the use of antibiotics has been shown to improve laying hen performance under certain conditions. The results from a previous experiment at this station showed that, while pelleting of a low density diet improved hen-day egg production, bacitracin increased production only during the later stages of production. Feed conversion was considerably improved due to either pelleting or the addition of bacitracin when the hens were over 60 weeks old. Neither form nor level of bacitracin (10, 20 and 40 g/ton) appeared to influence the overall performance.

Table 1 shows the composition of a low density diet used in a mash or pelleted form in the current study. A steam pelleting procedure was used in passing feed through a die containing 4.7 mm holes. Pellets were then crumbled to particles ranging from fine to 4.7 x 10 mm in size. Mash or crumbled feed was fed to two commercial strains of laying hens. Half of the birds received Aureomycin (50 g/ton) for a period of 1 week in each 28-day period to investigate the effect of this antibiotic addition on performance. A total of 212, 28-week old pullets of each strain was initially used for each treatment using a randomized complete block design for the arrangement in three replicate groups of 68 to 72 birds.

A significant increase in egg production was observed due to pelleting which is consistent with the previous results. The increased egg production rate was again concurrent with increased feed consumption, resulting in only a slight advantage in feed conversion favoring pelleting (Table 2). Addition of Aureomycin did not appear to affect the response to pelleting nor the egg production rate in general, although there was a trend for improvement during the last four 28-day periods (Table 3). Mortality was slightly reduced when feed was pelleted or Aureomycin was added. The addition of Aureomycin had no influence on interior quality of eggs as measured by Haugh units, while pelleting had an adverse effect.

One possible explanation for the lack of a marked response to the antibiotic may be the high level of production sustained by the hens on the control diet. It should be noted that hens on the control diet were still producing eggs at about 66% on the hen-day basis through 68 to 72 weeks of age. Pelleting was again shown to be beneficial when a fibrous, low-energy

[1]Superintendent, Poultry Research Center.
[2]Professor and Leader, Poultry, Research and Extension.

diet was used. However, increased feed intake and the cost of pelleting should be taken into account in evaluation of benefits. Currently, the costs would probably offset the advantages.

Table 1. Composition of basal diet

Ingredient	%
Ground oats	63.50
Yellow corn	16.60
Meat and bone meal	5.70
Alfalfa meal	3.30
Soybean meal	1.40
Limestone	5.00
Dicalcium phosphate	2.50
Yellow grease	1.00
Salt premix	0.50
Vitamin premix	0.50
DL-methionine	0.15
Calculated analysis:	
Protein, %	13.2
Metabolizable energy, Kcal/kg	2494.0
Calcium, %	3.05
Available phosphorus, %	0.86

Table 2. Effect of pelleting and/or Aureomycin on performance of laying hens

	Means of twelve 28-day periods			
	Feed form		Aureomycin level	
	Mash	Pelleted	0	50 g/ton fed 1 week/period
Hen-day production, %	72.8	75.5	74.4	73.9
Grams/day	45.5	47.5	46.8	46.2
Egg weight, g	62.5	62.9	62.9	62.4
Feed/day, g	119.5	123.9	122.4	121.1
Feed/dozen, kg	1.94	1.93	1.95	1.92
Grams egg/100 g feed	38.1	38.3	38.3	38.1
Mortality, %	4.5	4.4	4.8	4.1
Haugh units	78.8	74.6	75.5	77.9

Table 3. Effect of pelleting and/or Aureomycin on performance of laying hens

	Means of four 28-day periods[a]			
	Feed form		Aureomycin level	
	Mash	Pelleted	0	50 g/ton fed 1 week/period
Hen-day production, %	66.3	67.1	66.0	67.4
Grams/day	43.1	44.3	43.4	44.1
Egg weight, g	65.0	66.0	65.6	65.3
Feed/day, g	120.6	122.7	121.4	121.9
Feed/dozen, kg	2.14	2.16	2.18	2.13
Grams egg/100 g feed	35.8	36.1	35.8	36.2
Haugh units	72.2	67.2	68.1	71.3

[a]Periods 9 to 12.