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ECONOMICAL TURKEY BROILER DIETS

E. Guenther and C. W. Carlson

Approximately 600 large white and 150 broiler type poult were started, intermingled, in battery brooders. At three weeks of age, the poult were transferred to pens with crushed corn cob litter on the floors. Each poult had 2 sq. ft. of floor space. When the broilers were sold at 15 weeks, the remaining poult each then had 2.5 sq. ft. of floor space. The large turkeys were sold at 24 weeks of age. The turkeys were grown in complete confinement in a windowless house with a cement floor.

A high and a low protein series of corn-soy diets were developed, with one-half of the turkeys being fed on each series. The high protein series began with a 30% protein starter and ended with a 14% protein finisher. The low protein series started with 23% and ended with 12% protein. The low protein series was supplemented with 0.1% each of methionine and lysine. Zinc bacitracin at 25 gm/ton was included in all diets fed during the first five weeks, after which bacitracin was omitted from one-half of each series of diets.

Poult receiving bacitracin tended to have more skin fat, but bacitracin did not consistently affect growth, dressing percent, or feed conversion. The inconsistent effects might be expected because the poult were grown in new buildings and presumably infections had not built up on the premises.

When marketed at 15 weeks, the broiler turkeys receiving the high protein diets weighed 500 gr more than those fed low protein diets. The high protein diets produced slightly better finish and better feed conversion, but had no effect on dressing percent. Turkeys receiving high protein diets ate 5.2 kg. soybean meal compared with 3.4 kg. used in the low protein diets. Whether the output of an operation can be increased by growing broiler and heavy turkeys together in the same pens remains to be seen.

The results obtained with the large type turkeys fed high and low protein diets were similar to those observed with broilers, except for the following differences. At market time, the large turkeys receiving high protein diets weighed 300 gr. more than those fed low protein diets, but their feed conversion ratios were identical. Each bird on the high protein diets used 8.4 kg. soybean meal compared with 5.3 kg. used in the low protein diets. This means that 3.1 kg. additional soybean meal was used to produce the additional 0.3 kg. of gain. These results indicate that low protein diets, supplemented with methionine and lysine may be economical in conserving the use of dietary protein.

Mortality due to aortic rupture was 16% among the large type turkeys fed low protein diets compared with 8% for those fed high protein diets. Similar losses have not been reported at other stations. Further studies are planned.

Table 1. Feeding Schedule, Protein Levels, Energy Values, and Percent Soybean Meal Composition of Low and High Protein Diets

Age Weeks	% Protein	Low Protein		% Protein	High Protein	
		Cal./kg.* M.E.	% SBM		Cal./Kg.* M.E.	% SBM
0- 2	23	2818	32.1	30	2838	49.0
3- 5				28	2813	44.7
6- 8	20	2853	28.1	25	2838	41.8
9-11	18	2897	22.8	22	2904	33.9
12-15	16	2983	17.3	19	2987	25.8
16-20	14	3005	12.0	16	3011	17.5
21-24	12	3051	6.6	14	3058	12.2

*Kg. = 2.2 lbs.

Table 2. Weight Gains, Carcass Evaluations, and Feed Utilization

		Broiler Turkeys			
<u>Protein levels</u>		<u>Low</u>		<u>High</u>	
<u>Bacitracin (gm/ton)</u>		<u>0</u>	<u>25</u>	<u>0</u>	<u>25</u>
<u>Weeks</u>	<u>Live weights (kg.)</u>				
5		---	1.1	---	1.3
8		2.3	2.3	2.6	2.7
15		4.6	4.5	5.0	5.1
	<u>Dressing %</u>	76.1	74.8	76.2	76.0
	<u>Skin thickness, mm</u>	3.0	3.7	3.9	4.2
	<u>*Feed consumption (kg./bird)</u>	15.3	15.1	15.6	16.0
	<u>*Feed conversion</u>	3.3	3.4	3.1	3.1
	<u>*Kg. Soybean meal/bird</u>		3.4		5.2

*Composite of broiler and large turkeys

Table 3. Weight Gains, Carcass Evaluations and Feed Utilization

		Roasting Type Turkeys			
<u>Protein levels</u>		<u>Low</u>		<u>High</u>	
<u>Bacitracin (gm/ton)</u>		<u>0</u>	<u>25</u>	<u>0</u>	<u>25</u>
<u>Weeks</u>	<u>Live Weights (kg.)</u>				
5		---	1.0	---	1.2
8		2.4	2.3	2.6	2.5
15		5.1	5.1	5.6	5.5
24		8.4	8.5	8.8	8.7
	<u>Dressing %</u>	83.9	84.2	82.8	83.6
	<u>Skin thickness, mm</u>	9.3	12.2	10.8	11.9
	<u>*Feed consumption (kg./bird)</u>	35.6	35.3	37.4	36.8
	<u>*Feed conversion</u>	4.2	4.2	4.2	4.2
	<u>*Kg. Soybean meal/bird</u>		5.3		8.4
	<u>Mortality %</u>	14.4	17.3	6.7	9.3

*Composite of Broilers and Roasters