

1981

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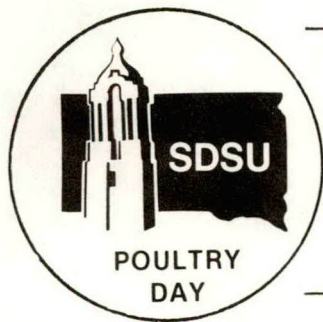
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Recommended Citation

Kashani, A. B. and Carlson, C. W., "Wheat Bran In Grower Diets And Subsequent Performance Of Layers" (1981). *South Dakota Poultry Field Day Proceedings and Research Reports, 1981*. Paper 2.
http://openprairie.sdstate.edu/sd_poultry_1981/2

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WHEAT BRAN IN GROWER DIETS AND SUBSEQUENT
PERFORMANCE OF LAYERS
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DEPT. OF ANIMAL SCIENCE REPORT
POULTRY 81-1

Rearing diets relatively high in fiber content have been shown to improve subsequent performance of laying hens. Whether this was primarily due to the lower energy content of a 12% protein mostly oats diet or the presence of higher fiber could not be clearly established. The objective of this study was to investigate the effect of 17% wheat bran in an isocaloric and isonitrogenous diet as compared to a corn-soy control diet.

Eight-week old pullets from two commercial strains previously fed a 19% protein diet were housed 10 birds per cage (61 x 41 cm) and fed one of the two grower diets (Table 1) through 19 weeks of age. Each experimental unit was replicated 10 times. At 20 weeks of age, the pullets were transferred to a layer house and fed a 14% protein layer diet for a period of 8 weeks. Egg production and feed consumption were recorded for the following twelve 28-day periods during which time the hens were fed a low density, 13% protein diet (oats as the major grain).

During the growing phase of the study, pullets fed the diet containing wheat bran gained 39 g more weight, on the average, than the birds on the control diet, which proved to be highly significant. Feed conversion data, however, were not affected by the dietary treatments (Table 2). The two strains were similar in their response to wheat bran.

As shown in Table 3, average hen-day egg production and egg weight for twelve 28-day periods were not affected by either the strain used or the grower diet previously fed. Strain A consumed significantly more feed than strain B ($P < 0.025$), which resulted in improved feed conversion for the latter strain ($P < 0.01$).

The slightly higher fiber content of the grower diet containing wheat bran did not appear to influence the production parameters during the laying stage. The lower energy content of higher fiber grower diets in previous studies could have been an important factor that elicited a beneficial response in subsequent performance. A current experiment is underway to investigate the effects of whole sunflower seed at levels of 19 and 38% in a grower diet on body weight and subsequent reproductive performance of pullets.

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Table 1. Composition of Grower Diets

Ingredient	Treatment	
	Control %	Wheat bran %
Yellow corn	84.0	60.0
Soybean meal (48%)	9.0	8.0
Wheat bran	---	17.0
Alfalfa	3.0	3.0
Yellow grease	---	8.0
Dicalcium phosphate	2.0	2.0
Limestone	1.0	1.0
Salt mix	0.5	0.5
Vitamin mix	0.5	0.5
DL-methionine	---	0.06

Calculated analysis:

ME, Kcal/kg	3128	3140
Protein, %	12.2	12.2
Methionine, %	0.24	0.25
Lysine, %	0.51	0.52
Calcium, %	0.89	0.89
Phosphorus	0.66	0.78
Crude fiber	2.9	4.2

Table 2. Effects of strain and dietary wheat bran on body weight gain and feed conversion

	Final body weight (kg)		Body weight gain (g)			Feed/gain		
	Strain	Strain	Strain	Strain	Avg	Strain	Strain	Avg
	A	B	A	B		A	B	
Control	1.37	1.37	762	773	768	6.7	6.6	6.65
Wheat bran	1.39	1.39	813	801	807**	6.8	6.8	6.80

** P<0.01.

Table 3. Effects of strain and wheat bran in the grower diet on laying performance

	Means of twelve 28-day periods							
	Control		Wheat bran		Average of strains		Average of treatments	
	Strain	Strain	Strain	Strain	Strain	Strain	Control	Wheat
	A	B	A	B	A	B		bran
Hen-day production, %	74.4	74.0	74.8	73.9	74.6	74.0	74.2	74.4
Egg weight, g	62.9	61.8	62.4	62.6	62.6	62.2	62.4	62.5
Feed consumption, g	126.0	116.0	122.7	118.7	124.4	117.4	121.0	120.7
Grams egg/100 g feed	37.6	38.9	37.7	39.1	37.6	39.0	38.2	38.4