

RESPONSE OF BROILER CHICKENS TO LASALOCID AND BACITRACIN IN THE DIET

M.O. Smith¹ and R.G. Teeter²

Story in Brief

A floor pen study was conducted to test the effect of bacitracin on broiler chicken performance when the diet contained lasalocid. The addition of bacitracin to the diet did not adversely affect weight gain or feed efficiency of lasalocid fed chicks. Mortality tended to be greater when birds received lasalocid alone.

(Key words: Lasalocid, Bacitracin, Weight Gain)

Introduction

Floor pen studies provide an experimental method which permits simultaneous comparison of groups of birds on various growth promotants. Similar data on production efficiency may be obtained from large field experiments, but require much greater expenditure. In contrast, less expensive laboratory experiments provide only limited data on production efficiency in a commercial operation.

The polyether antibiotic lasalocid has been shown to possess anti-coccidial activity (Mitrovic and Schildknecht, 1973) and does not result in growth rate depression when used at the recommended levels. Another antibiotic, bacitracin, has been reported to increase both weight gain and feed efficiency when fed to turkeys (Potter, 1971). Both lasalocid and bacitracin have been fed in combination with a variety of other drugs employed in poultry feeding with a high degree of compatibility. Specific drug combination must be properly tested before they are approved for use in livestock diet. This study was conducted to test the compatibility of lasalocid and bacitracin combination under floor pen conditions.

Materials and Methods

Seven hundred and twenty day-old Arbor Acre X Vantrass broiler chicks were randomly allocated to twelve pens (30 males and 30 females per pen). Pens were 7 x 12 feet in size and contained an automatic waterer, two tube-type feeders and infra-red lights. Supplemental feeder flats were used during the first 7 days.

Basal diets (Table 1) were calculated to satisfy nutrient requirement suggested by the National Research Council (Table 2). A quantity of basal diet sufficient to prepare the test diets were mixed and divided in to aliquots. These aliquots were then supplemented with premixes containing appropriate amounts of lasalocid or bacitracin. Lasalocid was included in the diet at 113 g per ton while bacitracin, when present, was at 50 g per ton.

¹Research Associate ²Associate Professor

Table 1. Composition of experimental diets.

Ingredient	Starter (%)	Finisher (%)	Withdrawal (%)
Ground Corn	54.80	57.83	57.83
Soybean Meal	38.00	35.08	35.00
Alfalfa Meal	3.00	3.00	3.00
Dicalcium Phosphate	2.35	2.35	2.35
Salt	.40	.40	.40
Vitamin Mix	.30	.30	.30
Trace Mineral Mix	.10	.10	.10
DL-Methionine	.15	0	0

Table 2. Calculated analysis of experimental diets.

Nutrient	Starter	Finisher	Withdrawal
ME (Kcal/kg)	2729.68	2762.58	2762.57
Protein (%)	22.13	21.01	21.01
Fat (%)	2.44	2.54	2.54
Fiber (%)	4.70	4.55	4.55
Calcium (%)	1.06	1.05	1.05
Phos. Available (%)	.60	.60	.60
Sodium (%)	.18	.18	.18
Potassium (%)	.99	.95	.95
Lysine (%)	1.27	1.19	1.19
Methionine (%)	.50	.40	.40
Met. + Cystine (%)	.78	.69	.69

A starter diet was fed for the first 21 days and a finisher diet for the next 21 days. For the last 6 days a drug-free withdrawal diet was fed.

Two treatments consisting of six replicates each were evaluated. Lasalocid at 113 grams per ton was the first treatment, the second treatment consisted of lasalocid combined with bacitracin at 50 grams per ton. Feed containing lasalocid was fed continuously until 3 days before final weights (9 days before slaughter) while bacitracin was fed continuously until final weights were taken.

Feed consumption was recorded throughout the study and at the end, body weight and feed utilization determined. Mortality figures were recorded daily.

Results and Discussion

Use of bacitracin in the diets of lasalocid fed broilers did not adversely affect bird performance (Table 3). Addition of bacitracin to the diet appeared to have beneficial effects on 46-day weights when averaged over sex. Male chickens showed a greater response to bacitracin than females, however. Feed efficiency was not decreased when bacitracin was included in the diet and the number of birds surviving was not adversely affected.

The results of this study demonstrate that bacitracin does not adversely affect weight gain or feed efficiency of pen-reared broiler chickens in the presence of lasalocid.

Table 3. Effect of feeding lasalocid (113 g/ton) with or without bacitracin (50 g/ton) on body weight, feed utilization and mortality of broiler chickens.

	Lasalocid	Lasalocid & Bacitracin
Body weight (g)	1498	1546
Feed (Kg)	210	215
Feed/Gain	2.40	2.34
Mortality %	5.78	4.1

Literature Cited

- Mitrovic, M. and E.G. Schildknecht, 1973. Anticoccidial activity of lasalocid (X-537A) in chicks. *Poultry Sci.* 52:2065.
- Potter et al., 1971. Effects of zinc bacitracin, dried bakery products and different fish meals in diet of young turkeys. *Poultry Sci.* 50:1109.