

SOME ACIDIFIERS USE IN THE ANTI-SALMONELLA PROTECTION OF BROILERS

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Introduction

Bird meat may be a source of infection for humans if contaminated with mobile salmonellas, especially those from the B and D serological groups.

Meat gets contaminated from salmonella carrier and expelling chickens when these are processed, manipulated and deposited in slaughtering houses.

Considering this, broiler chickens need to be protected against mobile salmonella infection, which besides producing toxiiinfection in humans, produce losses through chicken mortality.

Alongside general measures of unspecific prophylaxis, lately, other measures are used in broilers, such as: competitive exclusion, prebiotic products, probiotics and antibioprevention.

The carried out researches were meant to assess the protective effect of two products modifying the pH from the digestive tube of the chickens, protecting them against mobile salmonella infection.

Materials and methods

Experiments were carried out on two series of broilers (Ross 308), each of 100 heads, grouped into 4 batches, fed and watered under the same conditions.

In the first series, Sal Curb liquid product was tested. It was administered in concentration of 2‰ in water, and chickens were grouped as follows:

Batch 1 control; batch 2 chickens receiving 2‰ **Sal Curb liquid** in their drinking water; batch 3 receiving 2‰ **Sal Curb liquid** and infected, and batch 4 that was only infected.

In the second series, Selacid product was tested. It was administered in concentration of 1 ‰ in water, and chickens were grouped as above.

On the 8th day, chickens were infected with a culture of *Salmonella enteritidis* in broth (1×10^5 CFU/ chicken). For both series, the experiment lasted 5 weeks.

After the control infection, carrier status was monitored daily sampling with sterile tampons the cloacae content. Samples were inseminated on selenite medium and cultures

were plated on Rambach medium. Mean daily gain, specific consumption and final weights were recorded. All chickens were weighed weekly to determine the gain along with the determining of the specific consumption and weight up to 35 days of life.

Results and discussions

During the entire duration of the experiment, data were collected, processed, interpreted and they are given in table 1.

Table 1. Sal Curb and Selacid products effect on broilers infected with *Salmonella enteritidis*

Specification	Sal Curb				<i>Selacid</i>				Control			
	1	2	3	4	1	2	3	4	1	2	3	4
Live weight	104	308	679	1012	123	304	661	1255	110	300	642	942
Mean gain g.	67.4	204	371	332	86	180	357	594	73	190	341	300
Specific consumption (kg)	2.31	1.66	1.72	2.22	2.78	2.43	1.9	1.14	3.47	1.67	1.87	2.33
Carrier state		x	x			x	x			x	x	
Morbidity			3/25	3/25		5/25	5/25			20/25	17/25	
Mortality			1/25			1/25*	0/25*			3/25*	2/25*	

In broilers from the first series, analyzing the protective effect of the Sal Curb product taking as reference the control batch weight (100%) and appreciating the mean broiler weight, for each week, the following aspects result:

- In the first week, in L₂, mean weight represents 99.7%; in L₃ 105%, and in L₄ 95.3%.
- In the second week, in L₂, mean weight represents 101.2%; in L₃ 98.1%, and in L₄ 85.1%.
- In the third week, in L₂, mean weight represents 101.8%; in L₃ 99.09%, and in L₄ 89.2%.
- In the fourth week, in L₂, mean weight represents 102.5%; in L₃ 102.87%, and in L₄ 95.2%.
- In the fifth week, in L₂, mean weight represents 102.1%; in L₃ 101.2%, and in L₄ 95.1 %.

After the control infection, morbidity was of 4/25 in batch 3 in the third and fourth weeks and of 20/25 in the third week and 17/25 in the fourth week in batch 4, respectively. *Salmonella* carrier state in chickens was of 14 days for batch 3 and 30 days in batch 4.

Analyzing the effect of the Selacid product administered to the second series, a similar situation as in the first series was recorded:

- In the first week, in L₂, mean weight represented 99.5%; in L₃ 106%, and in L₄ 94.3%.
- In the second week, in L₂, mean weight represented 101.7%; in L₃ 97.5%, and in L₄ 84.1%.
- In the third week, in L₂, mean weight represented 101.2%; in L₃ 98.75%, and in L₄ 87.5%.
- In the fourth week, in L₂ mean weight represented 102.3%; in L₃ 102.27%, and in L₄ 94.2%.
- In the fifth week, in L₂, mean weight represented 102.24%; in L₃ 101.4%, and in L₄ 94.2%.

As well, after the control infection, a morbidity of 5/25 was recorded in batch 3 in the third and fourth weeks, and of 22/25 and 20/25 in batch 4, respectively. The carrier state was the same for 14 days in batch 3 and the same for 28 days in batch 4.

Conclusions

1. Both products were well tolerated by broilers and did not have adverse reactions.
2. Both products reduced the specific consumption and gave a mean weight greater than that of control.
3. Both products protected the chickens against salmonella infection after the control infection, even if the carrier state lasted for 14 days.

References

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