Influence of YEA-SACC 1026 Probiotic on Meat Quality in Chicken Broilers

Ionel TOADER*, Aurel ȘARA, Mihai BENȚEA, Mirela CADAR

Faculty of Animal Science and Biotechnologies, University of Agricultural Sciences and Veterinary Medicine, 3-5 Mănăstur Street, 400372 Cluj-Napoca, Romania

* corresponding author: tehnicianionel@gmail.com

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Abstract

The use of probiotics, as fodder supplement for chickens, could stimulate meat quality that is a very important criterion especially for human consumption markets. The study had in view the effects of YEA-SACC 1026 probiotic product on meat quality in chicken broilers. There were studied 75 meat chickens of Ross-308 hybrid grouped on three lots of 25 capita/lot during an experimental period of 42 days. In the mixed fodder of experimental lots was added YEA-SACC 1026 probiotic in proportion of 0.1% in lot L1(E) and in proportion of 0.25% in lot L2(E). In the experiment end were effected control slaughtering of 5 chickens per each lot, to establish the meat quality by trenching and meat chemical composition. After YEA-SACC 1026 probiotic administration, as fodder supplement, was improved the chicken meat quality by increasing the weight of superior quality meat in carcass. The obtained results confirm the favourable effects of probiotics on chicken meat production and its quality

Keywords: *chicken broilers, YEA-SACC 1026, meat quality*

Introduction

Antibiotics were used as growing promoter to prevent diseases and stress and to sustain breeding performances in commercial broiler farms. In many countries, the antibiotic use as growing promoter was forbidden because of antibiotic-resistant genes' activation and their effects on human health status (EC Regulation No. 1831/2003). In last years, an important interest was focused on probiotics use as alternative solution to antibiotics in animal nutrition. *Saccharomyces cerevisiae* was grown on yellow corn, malt and molasses and has in composition minimum 28% pure protein, minimum 6% pure fat, maximum 4% pure fibres, maximum 8% dry substance and contains minimum 5 million cells/gram and its commercial name is YEA-SACC1026. Probiotics are used as fodder additives in animal nutrition to realize biological protection of the host organism, to stimulate appetite, digestion processes and

productive performances (Nawaz *et al.*, 2016). Also, probiotics inhibit the growth of certain pathogens, which could produce toxic compounds (Patterson and Burkholder, 2003).

Aims and objectives

The study had in view the effects of YEA-SACC 1026 probiotic product on meat quality in chicken broilers.

Material and methods

The researches were effected on 75 meat chickens of Ross-308 hybrid grouped on three lots of 25 capita/lot during an experimental period of 42 days. In the mixed fodder of lot L1(E) was added powdery YEA-SACC 1026 probiotic (@Altech Romania) in proportion of 0.1% for 42 days. In the lot L2(E) was added in mixed fodder the powdery YEA-SACC 1026 probiotic (@Altech Romania) in proportion of 0.25% for 42 days. For

Tab. 1. Average values and variability of slaughtering efficiency in meat chickens

Lots	n	Slaughtering efficiency		
		Absolute		Relative
		X ± Sx	V%	%
L(M) control	5	75.93 ±1.92	5.66	100.00
L1(E) YEA-SACC 1026 0.1%	5	79.62**±0.65	1.82	104.85
L2(E) YEA-SACC 1026 0.25%	5	79.54** ±2.02	5.67	104.75

**, p<0.01- distinct significant differences

Tab. 2. The results of carcass trenching in meat chickens

Lots		Meat quality (% of carcass)					
		I		II		III	
		chest+thigh+shank		back+wings		head+neck+tibia	
		absolute	relative	absolute	relative	absolute	relative
L(M) control		60.50	100	27.60	100	11.9	100
L1(E) YEA-SACC 1026 0.1%		60.62	100.20	27.60	100	11.79	99.07
L2(E) YEA-SACC 1026 0.25%		60.89	100.64	27.23	98.66	11.88	99.83

the control lot L(M) was used only mixed fodder. In the experiment end, there was effected control slaughtering of 5 chickens per each lot, to establish the meat quality by trenching and entire carcass weights and their parts: head, neck, tibia, chest, thigh + shank, back and wings. The experimental data were statistically analysed with Student test by GraphPad InStat ver.3.10 program.

Results and discussion

The average values and variability of slaughtering efficiency in meat chickens are presented in *Table 1*, and from the data comes out that absolute slaughtering efficiency is almost equal in experimental lots and smaller in control one. As concerns the values of commercial yield, they follow the same way as slaughtering efficiency, the greatest value being for chickens of lot L1(E) (YEA-SACC 1026 0.1%) with an average of 83.69%, the next one being in chickens of lot L2(E) (YEA-SACC 1026 0.25%) with an average of 83.43%, and the smallest one in control lot L(M) with 80.29%. There are distinct significant differences (**) between experimental lots and control one. When the probiotic supplement YEA-SACC 1026 was in proportion of 0.20%, Sara *et al.* (2006) obtained an average value of commercial yield of 81.85%, and in control group an average of 78.33%.

From the data presented in *Table 2* it can be observed that in chickens of lots L1(E) and L2(E)

the weight in carcass of superior quality meat (quality I and II) is greater (88.22%, respectively 88.12%) than in control lot L(M) chickens (88.1%). Sara *et al.* (2006) obtained only 52.73% for 1st quality meat (YEA-SACC 1026 0.20%).

Conclusion

From the presented data comes out that administration of YEA-SACC 1026 probiotic in the chicken broilers' fodder improved:

the slaughtering efficiency, the commercial yield, the weight of superior quality meat in carcass presented in *Table 2*.

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