

**INFLUENCES OF SOME MEDICINAL AND AROMATIC PLANTS
ASSOCIATION, UPON THE QUALITY AND CHEMICAL COMPOSITION AT
BROILER HENS MEAT**

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Abstract

The following study presents the results obtained during the administration of some medicinal and aromatic plants upon the quality and chemical composition of broiler hens meat. One hundred twenty broiler hens from the hybrid Ross-308 were taken in the study, the experimental period being of 1 – 42 days, after the broilers being sacrificed . During the experiment were observed the organoleptic characteristics (taste, smell, colour, consistence), and fizio – chemical characteristics of the carcasses. Upon the obtained results we can conclude that the use of this biostimulators of growth based on plants, in broilers alimentation, didn't influence the primer markers of abator, and the obtained values regarding the protein and fats in the meat of broiler hens were conform the statistics from the doctrine, fact showing that the nutrition additiives based on plant extracts didn't have any influence upon the chemical composition of broiler hens meat.

Key words: medicinal plants, aromatic plants, broiler hens, meat quality.

INTRODUCTION

Regarding the mondial purpose of minimizing the use of antibiotics in animals nutrition because of security reason above the human kind health, and mostly the reason that in the UE many of the antibiotics of nutrition used were forbidden by law in 1999, at the latest (avilamycin, flavophospholipol, monensin and salinomycin) being forbidden in 1 january 2006 alternative strategies are needed in order to be prospered for the productivity and health of the animals, without increasing the price of productivity.

The request of salubrious food, germs free and without any trace of nocive substances it is more and more often between the customers (Mézes, 2004). Due to those requests there had been made changes in this orientation.

The following study presents the effects of associations between Artichoke and Thyme, Rosemary and Sea bucckthorn upon the quality and chemical composition of broiler hens meat.

MATERIAL AND METHODS

In this experiment were used 120 broiler hens, which were bought at the age of one day, from the hybrid Ross – 308. The 120 broiler hens, were randomly selected in four experimental trial of 30 broiler/trial, marked in order to be individualized and recognized in case of losing their primary places, during the manipulations done during the experimental periods: L1 (M) – control group; L2 – group in which drinking water had been used hydroalcoholic extracts of Thyme and Artichoke; L3 – group in which drinking water had been used hydroalcoholic extracts from Rosemary and Artichoke, and L4 – group in which drinking water had been used hydroalcoholic extracts from Sea buckthorn and Artichoke.

The adopted technology was that of raising broiler hens at land. The housing was made in separate compartments on trials, having a range of 12 birds/m², but in the same cottage, taking advantage in this way by the same climate and growth technology.

The lighting methods were in this order: 23 hours of light and one hour of dark. The experimental period was 42 days, being divided, in three periods like wise: starter (14 days): 1- 14 days ; grower (21 days): 15- 35 days; finisher (7 days): 36 – 42 day.

During the experiment were used combined nutritions matching for each moment, period of growth. N.C. starter with a CP of 21% and ME 2990 Kcal/Kg N.C., grower with a CP 19% and ME 3100 Kcal/Kg, N.C. finisher with a CP of 18% and ME 3150 Kcal/Kg.

All the four trial took advantage of the same type of nutrition, but at trials L2, L3, L4 were administered in the drinking water also a phytoadditives association, so: L2 (hydroalcoholic extract of Thyme 0.5 % (EHCi) + hydroalcoholic extract of Artichoke 0.5 % (EHA) = EHCiA, summing a concentration of 1 % in the drinking water, L3 (hydroalcoholic extract of Rosemary 0.5 % (EHR) + hydroalcoholic extract of Artichoke 0.5 % (EHA) = EHRA, summing a concentration of 1 % in the drinking water, L4 hydroalcoholic extract of Sea buckthorn 0.5 % (EHC) + hydroalcoholic extract of Artichoke 0.5 % (EHA) = EHCA, summing a concentration of 1 % in the drinking water.

At the end of the experimental period were sacrificed eight broiler hens/trial (four cocks and four chicks), the body weight of these representing the approximate medium body weight of the trial, being determined the primer abator indicators.

RESULTS AND DISCUSSION

By the analysis regarding the quality of broiler hens meat were observed the organoleptics and physiochemical parameters of the carcasses.

From the organoleptic point of view there occurred no changes. The pH values of broiler hens meat were classified in the normal limits. After 1.5 hours the obtained values were standing between 6.6-6.61, and after 24 hours between 6.06-6.07. Regarding the chemical composition of the broiler hens meat were estimated upon the pectoral muscles of broiler hens, the percentage of crude proteins and fats. The lowest value of fats were registered at L4, and the highest percentage of crude proteins at group L2 and L1.(view table 1.)

Table 1.

The value of crude protein and fats in the meat of the broiler hens.

Lot	PB %	Grăsime %
L1	22.3	4.3
L2	22.4	4.6
L3	22.2	4.2
L4	22.0	4.1

There had been registered datas regarding the range at sacrifice (the carcasses random and the comercial random), the class of quality of the resulted carcasses, importance of the broiler hens chests and legs in the building of the resulted carcasses, the total body weight gain of the comestible organs.

Table 2.

The main characteristics of the carcass at the four experimental groups.

Specification	G.c.m.* (g)	G.c.e.** (g)	Comestible organs (g)	R*** carcass (%)	R*** comercial (%)	Legs (%)	Chests (%)
L1 (Control)	2537.29 ± 41.16	1842.33	201.23	72.61	80.54	20.45	21.30
L2	2584.27 ± 48.39	1883.41	201.78	72.88	80.69	21.07	22.11
L3	2660.30 ± 50.74	1946.01	203.47	73.15	80.80	20.93	22.00
L4	2523.88 ± 44.12	1844.20	200.39	73.07	81.01	21.14	21.88

* - G.c.m. - Medium body weight gain (g)

** - G.c.e. - Eviscerated carcass weight (g)

*** - R - Random (%)

From the results of datas regarding the carcasses range it can be concluded that they registered very similar values in each of the four experimental groups, being between 72.61 % in the case of the broilers from L1 (M) and 73.15 % in the case of the broiler hens from L3. A similar evolution was registered also at the comercial value (wich contains behind the carcass also the internal comestible organs: liver, heart, spline, pipot) which registered values between 80.54% in the case of broilers from L1 and

81.01% at those from L4. As we can see L1 (M) registered the best sacrifices and commercial values, but without any significant differences compared to the trials which got phytoadditives (table 2).

CONCLUSIONS

The obtained values regarding the crude protein and fats in the meat of the broiler hens were conform to the standards, fact that shows that the nutritional phytoadditives based on plants, had influences on the chemical composition of meat. Analizing also the other studied characteristics, there weren't registered significant differences between the trials. Upon the obtain results we can conclude that the use of these biostimulators of growth based on, from the nutrition of broiler hens meat, didn't influenced the primary abator markers and they led to a good development of the internal organs.

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