Different Diets in Broiler Chickens Feed

Olimpia Colibar, Daniel Popovici

Faculty of Veterinary Medicine, University of Agricultural Science and VeterinaryMedicine of Banat, 300645 Timisoara, Calea Aradului 119, Romania

Abstract
Broiler chickens (one-day age) and special commercial feed for this category were used. Commercial diet of three feed producers (one from Romania –group III and two from Hungary – group II and IV) and a home-made diet formula (containing usual sorts of raw materials and supplements for this category -group I) were tested in four homogenous broiler groups. In spite of appropriate initial weight (41 g) after 42 days of different feeding, group III registered the higher body weight (3,01 kg) comparing with control group (2,11 kg.). Groups II and IV had medium values Even the feed conversion shows significant differences the price for all period / kg body weight was less fluctuates.

Keywords: commercial diets, broiler chickens, soya

1. Introduction

Investing in agriculture to raise broiler chickens it seams to be the most efficient way to get money in a short time. A complete cycle consists in a period of 35-42 days. Of course there were necessary some investments to ensure animal welfare according to European legislation. We experienced the possibility of a small farmer to do this job.

Like all agricultural sectors, breeding animals it's in reorganization process for economic criteria, but especially about European requirements.

Many feed producers appeared on the market in the last few years and from those some are in association with big and famous companies. In front of this generous offer can a small farmer make an appropriate evaluation? Commercial feeds may bee a complete, safe and efficient source for those?

* Corresponding author: Colibar Olimpia, E-mail olimpia_fmvt@yahoo.com

2. Materials and methods

One day age broiler chickens ROSS/308 were divided in four homogenous groups.

The groups were different fed:

- Groups II, III and IV with commercial diet of three feed producers (one from Romania –group III and two from Hungary – group II and IV). The IV group's diet didn't contain any animal protein source.
- Group I (reference group) with a home made formula including corn, soybean meal, fish meal, vitamin- mineral supplements.

The raw chemical composition of feed was determinate. Raw protein was quantified concerning Kjeldahl method using InKjel WD40 and Vadopest 40.

All animals were weighed at the start of each week at the end of growing period.

Weight gains were calculated on a daily basis. Records were kept of all feed added to feeds.

Feed consumption data was measured in a week interval weighting feeders.

Feed conversion was compared by dividing total feed by the total poultry gain of the lot. Temperature and light period were carefully evaluated.

The multiperiod timing measurement of body weight and the statistical signification are showed in Table 1and 2.

3. Results and discussion

Table 1. The evolution of mean broiler body weighs groups and standard deviation.

week / g	Group I weight ±XS	Group II weight ±XS	Group III weight ±XS	Group IV weight ±XS
1	136 ± 18.13	215 ± 14.64	193 ±15.61	124 ± 21.00
2	323 ± 35.00	536 ± 38.42	485 ± 41.15	315 ± 47.85
3	675 ± 85.66	1054 ± 76.00	1006 ± 82.92	641 ± 90.57
4	1117 ± 156.33	1744 ±160.71	1660 ± 147.69	1109 ± 170.64
5	1561 ± 226.73	2300 ± 170.00	2360 ± 232.30	1671 ± 205.71
6	2111 ± 256.26	2917 ± 154.85	3013 ± 291.46	2359 ± 275.14

Table 2 The statistical signification of the registered differences between groups (Anova test)

	Valoarea p		
	Group II	Group III	Group IV
Group I	p<0,0427(*)	p<0,0386(*)	p< 0,6137(NS)
Group II	-	p< 0,7438(NS)	p<0,0492(NS)
Group III	-	-	p<0,0779(*)

NS p > 0,05; * p < 0,05; ** p < 0,01; *** p < 0,001

In spite of an appropriate initial weight and in the same environmental conditions even in the first week some changes appear. After 42 days of different feeding best results registered group III and II (about 3000 g).The others groups recorded the worst performance (with 21, 37 % to group IV and with 29, 64 % to group I). The differences are relevant between the groups I and II, groups I and III and between the groups III and IV.

Between the groups I and IV, groups II and III and the groups II and IV, statistically speaking ,the differences are irrelevant.

Table 3 reporting the summary of the data shows the fluctuations of patterns of the performances.

Table 3. The main broilers performances

	Group I	Group II	Group III	Group IV
Feed administrations g	7084	6338,92	5630,92	6387,14
Body Weight kg	2,111	2,917	3,013	2,359
Feed conversion	3,35	2,17	1,86	2,11

The test diet showed better-feed efficiency for commercial feed so the problem of the farmer is to choose an appropriate producer.Feed intake/ daily gain, as we expected, was lowest to group III (1.86 kg), followed by group II and IV. Apparent, group I had a double value of feed conversion but it includes the highest looses – 30%. Comparing with reference and with offered data of Ross Company we obtained appropriate values to group III: 1, 86 (reference value 1, 82), but our chickens registered 3000g in 42 days not in 49 days [2,3,4].

The data resulting from raw chemical analysis mark out that raw protein values determinate are correct marked on the producers labels, even exceeding this (with 2-3 % to starter and finisher formula in diets of group III and with 39 % to grower formula) [1]. Correlated with the age of chickens at the beginning of the experiment the raw protein of feed oscillated between 22, 01 % and 20,12 % . At the end of the experiment the protein levels were 17,16- 18,92 %.

4. Conclusions

1. The test diet showed better-feed efficiency for commercial feed;
2. Raw protein value- the most important parameter for broiler chickens feed- are generally correct marked on the commercial diets producer labels;
3. There is a correlation between the high raw protein levels and daily gain that increased with 25-30 % in the fourth and the fifth week.

Acknowledgements

This work was done by research conducted within the CNCSIS grant, research contract PN-II-ID-PCE-2008-2 -1339, entitled Use in Animal Nutrition of By-Products Obtained from Manufacture of Biofuels and their Effect on Health and Livestock Production.

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