

EVALUTION OF THE ANTEIMERIAN EFFECT OF SOME PLANT EXTRACTS IN QUAIL EIMERIOSIS

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Key words: oocysts, eimeriosis, plant extracts, quails.

Abstract: The intensive breeding of quails knows large development perspectives. The japonese quail *Coturnix coturnix japonica*, the smallest tamed avian specie is used not only for egg production but also for meat production. Fast growing ritm, early sexual maturity, short period between generations, great egg production small fadder needs, and small space comparativ to other bird species exploited for the same purpose, are the main characteristics of this avian specie. This study is the gathering of data regarding the evolution and pathogeny of eimeriosis in quail, as well as the establishment of some phitoterapeutical programs in order to reduce as much as posible the incidence of this diseases in quail breeding complexes.

INTRODUCTION

Eimerioses are diseases of the digestive system and adnexal glands characterized by acute or chronic enterocolytis. They are induced by protozoan parasites from the Order *Coccidia*, Family *Eimeridae* and evoluate in all animal species, with different clinical signs determining important losses in bird populations, especially chicken.

The importance of eimeriosis is due to the economic losses produced by high mortality, growth delay and low weight gain rate.

The researches performed until the present had the purpose to determine the ethiologic agent of eimeriosis, the epidemiological factors of the disease, the clinical signs, the anatomopathologic patherns, the prevention and treatment schemes applied in the infected animals (Cozma, 1996).

The attempt of taming some feral birds and their husbandry in specialized farms for meat and egg production, has growing interest in the last decades. These kind of birds like the quail, are searched for their meat, because it has good taste, specific to that of feral animals.

In the last years, business men and traditional animal breeders from Romania are more and more interested in such feral birds, in order to raise them on specialised farms or near their residence.

The quail belongs to *PHASIANIDAE* family, like the chicken, turkey, pearl hen, pheasant and partridge. From the 5 or 6 subspecies of the common migrating quails, *Coturnix coturnix*, that live in Europe, Asia and Africa, the *Coturnix coturnix japonica* subspecies was domesticated and it is spread through Japan, Jakhalin Islands and Indochina (Alexandru, 2001).

Following domestication, the quails suffered a series of morpho-productive changes. Their color diversified, existing lot of colors (white, black, red, silver or versicolored), the body weight has grown in the broilers reaching 300g, the egg production has grown from 8-12 to 300 pieces in the specialized lines for egg production.

In the last years, husbandry of quails became an important element of diversification in aviculture, mostly in the advanced countries, in order to offer to consumers valorous alimentary products, with delicatessen features (Polen, 2002).

MATERIALS AND METHODS

Aim: Testing the efficacy of some natural plant extracts in experimental eimeriosis of quail's poultry.

Period: The experiments were performed in the Biobasis, Clinic and Laboratory of the Parasitology and Parasitic Diseases Department, Faculty of Veterinary Medicine Cluj-Napoca, between December 2005 and April 2006.

Experimental design: The researches made in order to determine the coccidiostatic effect of the plant extracts were performed on 60 quail chicken of 10 days old, raised in batteries. The quails were grouped as it follows:

- Group 1 – 10 quails; administration of *Artemisia annua* extract and infected. The extract was administered to the 10 days old quails, by oral mean and after 5 days they were infected with 5000 indectionous oocysts of *Eimeria spp.*, 2 days consecutively.
- Group 2 – 10 quails; administration of *Berberis vulgaris* extract and infected. The extract was administered to the 10 days old quails, by oral mean and after 5 days they were infected with the same number of oocysts in the same way as in group 1.
- Group 3 - 10 quails; administration of *Trigonella foenum-graecum* extract and infected. The phytotherapy began 5 days before the administering of the infectious oocyst suspension in the 10 days old quails, administered by oral mean.
- Group 4 - 10 quails; administration of *Vaccinum myrtillus L.* extract and infected. The phytotherapy and infection was performed as in the latest group.
- Group 5 - 10 quails-positive control group; infected with infectious 5000 oocysts of *Eimeria spp.* Oocysts were administered by oral mean, 2 days consecutively.
- Group 6 – 10 quails- negative control group- uninfected, untreated.

Objectives: Weight gain rate in the experimental groups, feed consume and food conversion rate in the experimental groups, eimeriostatic performance index and percentage.

RESULTS AND DISCUSSION

Regarding the obtained results we noticed that the highest weight gain rate was in the groups treated with *Vaccinum myrtillis* 750 g/group, and the highest individual mean was in the same group 75 g /quail. The groups treated with *Trigonella* and *Berberis* extracts had the average rate identical to the 720 g/group value.

The best values of food conversion rate were registered in the group treated with *Berberis* extract, being necessary 3.26 kg of forage for 1 kg growing rate. The groups treated with *Vaccinum* and *Trigonella* extracts had quite good values of food conversion rate: 3.32, respectively 3.47, superior to the positive control group in which the conversion rate was of: 5.88 kg food/ kg rate (fig.1).

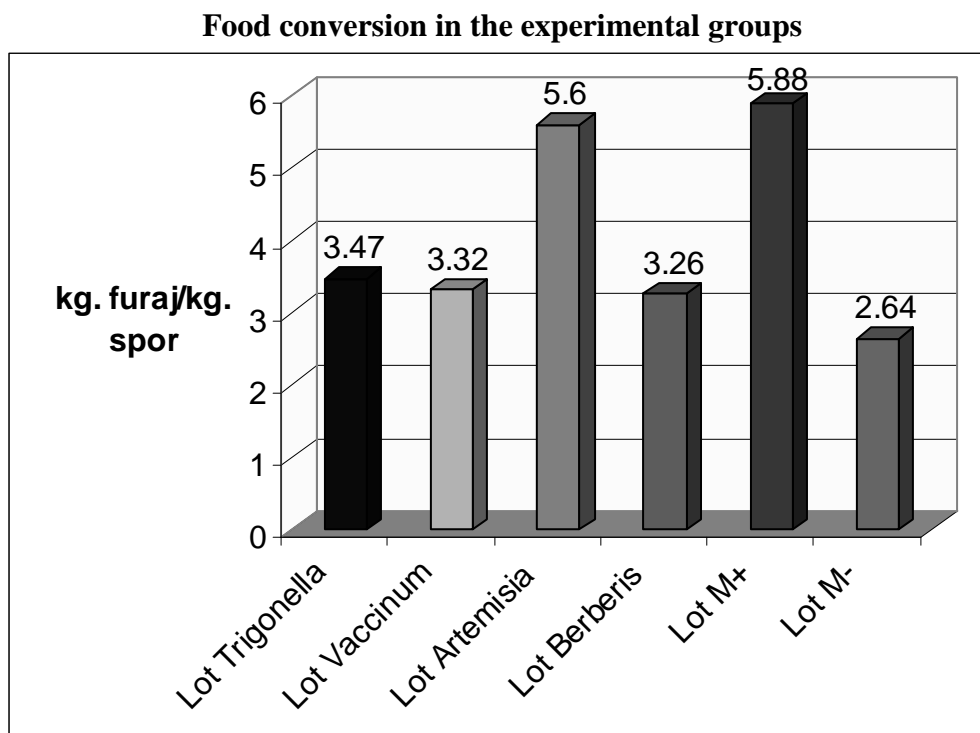


Figure 1

A special situation was encountered regarding the food conversion rate of the group treated with *Artemisia*, in which for 1 kg growing rate was necessary 5.6 kg forage, this value being twice higher than the negative control group's value.

CONCLUSIONS

The researches performed between December 2005 and April 2006 concerning the testing of antieimerian efficacy of some plant extracts from the spontaneous flora of Romania, revealed the following.

- The highest weight gain rate was observed in the group treated with *Vaccinum*: 750 g/group and an average of 75.0 g/quail;
- The best eimeriostatic index was observed in the group treated with *Vaccinum* (IE=836,8) and the eimeriostatic performance index of 97.8; groups treated with *Berberis* and *Trigonella* had slight inferior values of IE: 811,2 and 804,6 respectively, with an eimeriostatic performance of 94,8 and 94,1 respectively.

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