

**FIRST OCCURRENCE OF THE FLEA CTENOCEPHALIDES FELIS FELIS (BOUCHE, 1835)  
IN CHICKENS KEPT UNDER INTENSIVE BREEDING CONDITIONS IN SERBIA**

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*A large population of the cat flea Ctenocephalides felis felis (Bouche, 1835) was observed on chickens kept on a poultry farm in the Timok district - Serbia. This species of flea is not specific for poultry and this was the first occurrence of these fleas in chickens in our country. In this report we describe its occurrence and measures for its eradication.*

*Key words: poultry, fleas, Ctenocephalides felis felis.*

INTRODUCTION

The occurrence of ectoparasitoses in modern poultry breeding systems is of permanent importance because health is a main factor in preventing economic problems. Many species of arthropods, which are ectoparasites of poultry have been detected in Serbia (Cvetković et al., 1961; Cvetković et al., 1963; Cvetković et al., 1965; Pavlović et al., 1990; Pavlović et al., 1991) and many nonspecific kinds of arthropods have been found in farm buildings (Pavlović et al., 1990). Egg drop, high mortality and low growth rates are some negative consequences of ectoparasite infestation.

In Yugoslavia, most poultry ectoparasitoses involve lice, mites and ticks. Flea infestations were found only once in Serbia (Tomanović, 1969), caused by the human flea *Pulex irritans* (Linne 1758).

MATERIAL AND METHODS

On a poultry farm in the Timok district we found a large population of ectoparasites. There are 4 separated buildings on that farm. One was inhabited with 8600 chickens and the other 3 were prepared for receiving new batches of chickens. Ectoparasites were found in all the buildings. During our visit to the farm we noticed many mistakes in zoohygienic practice. Namely, there was a large population of stray cats and dogs. Garbage was collected near the farm buildings. None of the buildings had disinfection barriers. The buildings were dilapidated and inconvenient for the required production. We found no records about disinfection of pest control which should have been done before the chickens were moved.

Wood shavings, packed into the plastic bags and 30 chickens from the farm were taken for examination.

Ectoparasites were collected live by means of lightly sprung forceps, placed in glass specimen bottles, then killed, cleared in 5% potassium hydroxide and mounted in Canada balsam.

The identification of the ectoparasites was based on their morphological characteristics, using keys given by Herms (1950), Lapage (1969) and Soulsby (1977). Our identification was verified at the Institute of Parasitology at the Faculty of Veterinary Medicine in Belgrade.

We used a contact insecticide with repellent effect consisting of cis and trans isomers of permethrin in the ratio 25:75, for eradication of the ectoparasites. It was sprayed as an emulsion in a concentration of 0.05 %. We treated all buildings and chickens on the farm with the insecticide above. After two weeks we repeated the treatment.

#### RESULTS AND DISCUSSION

The cat flea *Ctenocephalides felis felis* (Bouche 1835) was found on the examined farm. Infestations of these fleas primarily occur in cats, rarely in rodents and men but its occurrence is very unusual in chickens (Herms, 1950; Lapage 1968; Baresford Jones 1974. and Hofstad, 1978). Examination of wood shavings showed 10 to 50 fleas per m<sup>2</sup>. In the infested chickens we found 5 to 26 fleas. Although the chickens were disturbed, there was no increase in mortality rate from the usual. Autopsy showed indigestible parts of fleas in the proventriculus and gizzard, but there were no digestive problems or enteritis in the chickens.

There were several factors responsible for such a situation, but mainly it was inappropriate disinfection of the farm buildings. In modern poultry breeding there are many factors that enable the appearance and spread of ectoparasites. Thus, the constant high temperature and humidity that exist in buildings on poultry farms, are necessary for breeding technology. The large numbers of chickens also give ideal conditions to increase the population of ectoparasites. Once brought into the building with a large number of susceptible birds, and being in an ideal microclimate, ectoparasites are likely to cause considerable economic losses due to their number and mode of feeding. (Pavlović et al. 1988).

We found a large population of the cat flea *Ctenocephalides felis felis* (Bouche 1835) at the beginning of summer when the high temperature enabled rapid development of the fleas. The large population of stray cats and dogs, garbage collected near the farm buildings and the inadequate zoohygienic conditions allowed those fleas to be carried into the farm on rodents, cats, dogs, and in the wood shavings used as bedding before the chickens were moved. On arrival, the fleas attacked the chickens.

Measures to control this ectoparasitosis in terms of prophylactics and treatment should be based on an understanding of the biology of the individual arthropod species concerned, especially as this was the first occurrence of this species of arthropod.

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In our case the building was treated with contact insecticide (cis and trans isomers of permethrin). After the first treatment, adult fleas were eliminated. The second treatment after two weeks eradicated larval fleas, which had developed from eggs.

Adequate zoohygienic measures are necessary and represent a most important part of prophylactic treatment in intensive farms for the breeding of chickens. Disrespect for this basic zoohygienic regulation was the cause of the emergence of cat fleas on a poultry farm.

This finding of the cat flea *Ctenocephalides felis felis* (Bouche 1835) represents the first occurrence of this kind of flea in chickens in Yugoslavia.

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#### PRVI NALAZ BUVE *CTENOCEPHALIDES FELIS FELIS* (BOUCHE, 1835) KOD ŽIVINE U INTENZIVNOM ODGOJU U SRBIJI

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Na jednoj farmi za odgoj živine u Timočkom regionu uočena je masovna populacija buva *Ctenocephalides felis felis* (Bouche 1835). Buve su se nalazile u objektima i inficirale su ovde useljenu pilad. U prostirci njihov broj se kretao od 10-50 po 1 m<sup>2</sup> a kod pilića od 5-26 buva. Kod uginulih pilića ustanovljeno je prisustvo nesvarenih delova buva u mišićnom delu želudca, bez drugih patoloških delovanja. Procenat uginuća nije prelazio granice tehnoloških nor-

mativa, mada je jato bilo vidno uznemireno. Nakon tretmana kontaktnim insekticidom (cis i trans izomer permetrina) buve su uklonjene, a stanje se bitno poboljšalo.

Nalaz mačije buve *Ctenocephalides felis felis* (Bouche 1835) kod pilića je izuzetno redak i ovo predstavlja prvi nalaz kod živine u Jugoslaviji.