

PARAMETERS OF NASAL BOTFLY INFESTATION OF ROE DEER IN PLAIN LOCATIONS

PINNYEY SZILÁRD

University of Szeged, Faculty of Agriculture, Institute of Animal Science and Wildlife Management 6880, Hódmezővásárhely, Andrassy u. 15.
pinnyey@mgk.u-szeged.hu

ABSTRACT - Parameters of nasal botfly infestation of roe deer in plain locations

I am investigating the occurrence of one of the diseases caused by parasites in plain roe deer populations, namely a botfly larvae, *Cephenemyia stimulator*, (CLARK, 1815) ranged among the Oestridae family. Nasal botfly larvae are common roe deer parasites and are generally spread nationwide. The subject of the present survey is the processing of the data gained about roe deer bucks of the year 2009 and their infestation indices. I investigated botfly larvae in 75 bucks' nasal and pharyngeal cavity. We have found botfly larva in 17,3% of the examined bucks (prevalence), this means 13 infected specimen. I collected 199 pieces of larvae from the samples, with a 15,3 pieces mean intensity. In our investigations prevalence was lower than in previous Hungarian researches. This was manifested both in our overall data, and in our examinations by the different age groups.

The rate of infestation was demonstrably higher in the old age group. This can be explained by the territorial behaviour of the roe deer, which can also be manifested by the older bucks' displacement to weaker habitats.

Keywords: Roe deer, botfly, *Cephenemyia stimulator*, parasitosis

INTRODUCTION

The role of roe deer - especially bucks – in our wildlife management is really significant. One of the conditions of good quality roe deer populations is proper animal health state. It is therefore very important to know those diseases which mostly influence the roe deer's general health state. I am investigating one of the parasitic diseases, namely the occurrence of a botfly, *Cephenemyia stimulator* (CLARK, 1815) larvae, ranged among the Oestridae family.

Relying on domestic observation we can speak of the occurrence of a significant country-wide parasite infestation. Earlier examinations showed a 71,7% infestation level of roe deer, and the average intensity amount was 12 specimen (SUGÁR, 1978). Most recent research, on the contrary, has shown different results. KIRÁLY AND EGRI (2003, 2004, 2007) inform us in their works that the prevalence in roe deer was 34,8% in 2002, while it was 38,5% in 2003 considering Tolna county. Mean intensity amount was 8,7 in 2002 and 9,8 in 2003.

Opinion is split in respect to what degree parasite larvae damage the host organism. According to MINÁR (2000), in the young age group we can count on significant damage. SUGÁR (1978, 2000) in contrast does not consider the presence of larvae significant.

MATERIAL AND METHODS

I collected the samples necessary for research in 2009 from the end of April till the end of September, in the lands of three wildlife management regions, primarily in the southern parts of the Great Plain. I examined 75 roe deer bucks altogether, in which I found 199

botfly larvae. The samples ready for examination were specimen cut into small skulls. The main aspect during larva collection was to find all infected individuals and each and every larvae. At the same time we noted the individuals identification data, the eviscerated body weight, later on the age, the condition, the weight of the trophy.

I defined the collected botfly larvae by stereomicroscope, in which the descriptions of Papp and SZAPPANOS (1992), as well as MINÁR (2000) oriented us. From the such gained data we calculated the characteristic botfly larva *indices*:

- prevalence %: infected/examined specimen
- mean intensity: number of larvae found/number of individuals carrying larvae.

Statistics were performed using SPSS for Windows 15.0.

I created three age groups for further analysis, on the basis of trophy judgement ages.

- young: 1-3 years
- middle-aged: 4-5 years
- old: 6 years and above.

RESULTS

I found botfly larvae in 17,3% of the examined roe deer bucks, which meant 13 individuals carrying larvae. I summarized the detailed figures in *Table 1*.

Table 1. Detailed figures of roe deer nasal bot fly infection

Indices	2009
Number of examine specimen(n)	75
Larva carrier (n)	13
Prevalence%	17,3
All larvae (n)	199
Mean intensity (n)	15,3
Spread(n)	4,04
Variance	16,33
Minimum	5
Maximum	48

FUENTE AT AL. (1998) carried out investigations on where they found that mean intensity grows parallel with age. SUGÁR (1978) earlier investigated that there is no difference among the infestation indices of the different age groups. According to KIRÁLY AND EGRI (2003) among young and old ages the proportion of infestation is significantly higher than

among the middle-aged. Our own investigations proved the infestation indices of the older aged significantly different from the young and the middle-aged

Table 2. Nasal botfly infestation of roe-bucks by age group

Indices	Young	Middle aged	Old
Nu. (n)	21	49	6
Larva carrier (n)	4	6	3
Prevalence %	19,0	12,2	50,0
All larvae (n)	69	71	59
Mean intensity (n)	17,25	11,8	19,7

IMPLICATIONS

In my investigations the prevalence was significantly lower, however mean intensity showed a higher rate than it has in earlier published investigations in Hungary. It manifested both in the overall data and the analysis according to age groups.

The infestation rate was demonstrably higher ($P < 5\%$) in the old age group. This can be explained by the territorial behaviour of the roe deer, which can also be manifested by the older bucks' displacement to weaker habitats. The weaker habitat for the roe deer can be pleasant for the parasites, the possibility KIRÁLY AND EGRI (2003) calls attention too.

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