

INVESTIGATIONS INTO THE PRESENCE OF VIRAL INFECTIONS IN ANIMALS OF HUNTING INTEREST IN NORTHEASTERN ROMANIA

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Abstract

Forest ecosystems are characterized by a great diversity but at the same time by a great capacity for self-regulation, self-reproduction and stability. They still have dominance of the bioecology and pathology of the animals still incompletely elucidated and, respectively, controlled. The following species of wild animals of hunting interest were studied: deer (*Dama dama*), wild boar (*Sus scrofa ferus*) and fox (*Canis vulpes*) and the diseases studied are: African swine fever in wild boars, specific diseases of deers and Rabies in foxes. The study provides support for preventive management actions aimed at protecting the public health and the economy.

Key words: public health; economy; African swine fever; hunting

INTRODUCTION

Romania's integration in the economic and social structures of the European Community is not possible without the alignment of the Romanian scientific research to the community priorities and, especially, to the methodology of the true research. In the fields of biology, human health and veterinary health, the identification of problems can be done by small research teams or even by isolated researchers, but solving them requires, however, broad collaborations between different research and development entities, economic units and public administration.

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PURPOSE OF THE WORK

The main purpose of the research is to analyze the epidemiological and zoonotic impact associated with some species of hunting interest in the N-E area of Romania. The following species of wild animals of hunting interest were studied: deer (*Dama dama*), wild boar (*Sus scrofa ferus*) and fox (*Canis vulpes*) and the diseases studied are: African swine fever in wild boars, specific diseases of deer and Rabies in foxes.

We consider the wildlife in Romania an important source of public income that is superficially exploited, partly due to the fact that

the biological and health needs of different species of animals of hunting interest are not fully resolved. In addition, many of the wild species are the natural reservoir of many domestic animal diseases, to which is added the presence in wildlife populations of some very serious zoonoses, which make the wild animal a factor of biological pollution of the environment and of permanent risk to public health.

MATERIAL AND METHOD

The research in this study was carried out in Neamt county. The DSVSA database was accessed to obtain informations.

Compared to 2020, if we talk about materials and methods, this year were analyzed for rabies surveillance 157 samples by direct immunofluorescence (IFD) and 5 samples by the intracerebral inoculation test of mice (bioprob). Also for rabies surveillance, 152 mandibular samples from shot foxes were analyzed for biomarker determination control. 152 thoracoabdominal fluid samples for serological control ELISA postvaccine antibodies were also analyzed.

For African swine fever, 744 sets of organs from wild boar were tested by ELISA and 734 blood samples on EDTA for RT-PCR examinations.

For the surveillance of classical swine fever, 254 sets of organs from wild boar were analyzed by ELISA and 254 blood samples on EDTA for examinations in the direction of RT-PCR.

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For the spongiform encephalopathies, 30 blood samples on EDTA were analyzed for examinations in the direction of RT-PCR.

Compare to 2021 (01.01.2021-30.06.2021), this year were analyzed for the surveillance of rabies 100 samples by IFD. In 2021, the oral vaccination campaign for foxes in Romania was not started.

For African swine fever, 230 sets of organs from wild boar were tested by ELISA and 230 blood samples on EDTA for RT-PCR examinations.

For the surveillance of classical swine fever, 251 sets of organs from wild boar were analyzed by ELISA and 230 blood samples on EDTA for examinations in the direction of RT-PCR.

For the spongiform encephalopathies, 7 blood samples on EDTA were analyzed for examinations in the direction of RT-PCR.

RESULTS AND DISCUSSION

Following the examinations of the serum and organs samples collected from the animals hunted on the territory of the Neamt county during 01.01.2020-30.06.2021, the following were found:

1. The number of serum and organ samples examined was significant and the examinations performed were the most reliable and recommended for supervised diagnoses (Table no.1 and table no.2);
2. Both the serological examination by ELISA and the examination of organ samples by RT-PCR were negative (Table no.1 and table no.2);
3. Rapid serological examination by ELISA for surveillance of spongiform encephalopathies in cervids was also negative (Table no.1 and table no.2).

CONCLUSIONS

1. Wildlife tank zoonoses are a major public health problem affecting all continents. Hundreds of pathogens and many different modes of transmission are involved and many factors influence the epidemiology of different zoonoses. The importance and recognition of wildlife as a reservoir of zoonoses are growing. Cost-effective

prevention and control of these zoonoses requires an interdisciplinary approach and international cooperation. Surveillance, research, training, education and communication are key elements.

2. Throughout history, wildlife has been an important source of infectious diseases transmitted to humans. The importance of such zoonoses is increasingly recognized and more attention is needed in this area.

REFERENCES

- Cotta V., Bodea M., Micu I., (2001). *Vânatul și vânatoarea în România*. Ed. Ceres, București;
- Gavier-Widen Dolores J., Paul Duff, Anna Meredith (2012). *Infectious Diseases of Wild Mammals and Birds in Europe*. Wiley-Blackwell;
- Moga Mânzat R., (2001). *Boli infecțioase ale animalelor*. Editura Brumar Timișoara;
- Nesterov V., (1984). *Bolile vânatului*. Ed. Ceres, București;
- Oprean O.Z., (2001). *Ecologia și patologia animalelor sălbatice din zona de nord a Moldovei*. Editura „Ion Ionescu de la Brad”, Iași;
- Puchianu G., Secașiu V. (2012). *Patologia faunei de interes cinegetic*. Editura Universității Transilvania din Brașov;
- Secașiu V., Puchianu G., (2019). *Patologia vânatului; Hotărârea de Guvern nr.55 din 16 ianuarie 2008, pentru aprobarea Programului strategic privind supravegherea, controlul și eradicarea turbării la vulpe în România; Manualul OIE, Ediția 2018;*
- Legea vânătorii și protecției fondului cinegetic nr. 407/2006, publicată în Monitorul Oficial al României, Partea I, nr. 944 din 22 noiembrie 2006, cu modificările și completările ulterioare;
- Ordinul nr. 35/2016 al Președintelui ANSVSA pentru aprobarea Normelor metodologice de aplicare a Programului acțiunilor de supraveghere, prevenire, control și eradicare a bolilor la animale, a celor transmisibile de la animale la om, protecția animalelor și protecția mediului, de identificare și înregistrare a bovinelor, suinelor, ovinelor, caprinelor și ecvideelor, precum și a Normelor metodologice de aplicare a Programului de supraveghere și control în domeniul siguranței alimentelor;
- Ordinul nr. 79 din 18 septembrie 2008 (*actualizat*) pentru aprobarea Normei sanitare veterinare privind notificarea internă și declararea oficială a unor boli transmisibile ale animalelor;
- Regulamentul (CE) nr.338/97 al Consiliului European din 9 decembrie 1996 privind protecția speciilor de faună și floră sălbatică;

Table no.1

01.01.2020-31.12.2020

Nr. crt.	Animals examined	Diseases investigated	Number of samples		Results		
			Blood samples	Organs	ELISA	RT-PCR	IFD
1	Wild boar	CSF	254	254	Negative	Negative	-
		ASF	734	744	Negative	Negative	-
2	Deer	Spongiform encephalopathies	30	-	Negative	Negative	-
3	Foxes	Rabies	-	155	-	-	Negative

Table no. 2

01.01.2021-30.06.2021

Nr. crt.	Animals examined	Diseases investigated	Number of samples		Results		
			Blood samples	Organs	Test ELISA	RT-PCR	IFD
1	Wild boar	CSF	230	251	Negative	Negative	-
		ASF	230	230	Negative	Negative	-
2	Deer	Spongiform encephalopathies	7	-	Negative	Negative	-
3	Foxes	Rabies	-	100	-	-	Negative