

# The importance of coordinated monitoring in the control of outbreaks and expansion of wildlife diseases in Bosnia and Herzegovina

Sinanović N<sup>1</sup>, Zuko Almedina<sup>1</sup>, Rajković Nada<sup>2</sup>

Conference report

## Summary

The paper presents the topic of conducting measures in the control of health condition of game as the source and vectors of infectious diseases. The control of appearance and spreading of game disease in Bosnia and Herzegovina. As the real direct damages caused by game diseases, as well as those appearing by hunting are still unknown, the importance of game monitoring for the entire country is emphasized. The analysis of individual samples of dead animals is actually related only to sporadic cases which can not give an insight to percentage of some disease, and they are indicative only when the epidemics is developed in some area. A well designed coordination of high quality in veterinary and hunting field is emphasized in establishing monitoring.

**Key words:** game, monitoring

## Introduction

The problem of conducting measures that protect human and animal health from the aspect of game health conditions control, as well as sources and vectors of infectious diseases, is a very complex subject (Aguirre et al., 2004). When we speak about directly predisposed people, it is usually thought about hunters, foresters, cattle breeders, vets and other categories that directly contact game and the ambient in which it lives (Daszak et al., 2000; Littin and Mellor, 2005). On the other hand, we can also speak about directly exposed animals such as hounds, stray dogs, but also domestic animals that use the same paths and pasture land as wild animals do.

In the context of protection; veterinary, sanitary, preventive and diagnostic measures represent only one segment in the entire complex of necessary activities as well as performing inspection surveillance, application of prophylactic measures

and a control of processing, manufacturing and trading game and its parts represent important issues.

## Inspection and monitoring

If we analyze the approaches mentioned above that have also been processed by actual legislative regulative, it is certain that they are very important, but they are not enough, nor they represent a complete system of measures, which should be taken in order to continuously and in time, deal with the control of outbreaks and expansion of wild animals' diseases. In order to get one complete and reliable picture that will point out the actual size of the problem, a well considered, systematical and interdisciplinary monitoring is needed, which would include all the factors that might contribute to the monitoring of diseases outbreaks and expansions.

Considering monitoring mentioned above, monitoring of controlled game breeding is understood

as a part of management implementation (Sinanović et al., 2006). If we observe the present situation closely, it is obvious that complete management implementation is, in this respect, questionable.

Monitoring in control of outbreaks and expansions of game diseases in nature represents a more complex segment if it is seen as implementation of these measures and at the beginning of the issue analysis, economic factor is certainly suggested as one of the primary and the most important questions. We had an opportunity, not so long time ago, to observe certain projects such as the so-called per oral vaccination of foxes project in bordering countries, the price for which was rather high, but efficiency indicators were low.

The approach of implementing these measures is somewhere seen from the aspect of contemporary cattle breeding, but the practical imple-

<sup>1</sup> Sinanović Nasir, PhD, assistant professor, Zuko Almedina, PhD, Full Professor, Veterinary faculty, University of Sarajevo

<sup>2</sup> Nada Rajković, DVM, Pomoćnik Ministra, Ministarstvo poljoprivrede, vodoprivrede i šumarstva FBiH

mentation completely seen through this prism leads to complex problems and disability of application.

When we consider bringing game into the hunting areas, it is obvious that quarantine in this process is considered an obligatory measure and it is conducted. However, the game's constant migration inside their habitats can cause carrying and transferring parasites and infectious diseases that can become a problem of other game, cattle, dogs and people as well.

Basically, we can say that measures implemented in the open habitats represent quarantine for new game and general hygienic and sanitary procedures, which depend upon the game species and diagnosed disease. Sanitary executions are a part of this.

As mentioned above, problems of extensive and intensive game breeding are extreme in its character. The contemporary practice is somewhere in the middle. It includes gathers, huge game preserves, enclosed hunting areas, particular breeding phases and different combinations of all. It would be optimal to adjust these measures for every breeding. Naturally, this is the veterinary question, in which we have to differentiate game sanitation from disease treatment, considering the fact that these two activities are closely connected.

We also have to question practical implementation. Knowing that rotting animal carcasses are rarely found and even when found they are not in the appropriate conditions for pathological dissection and examination, so game monitoring is easy to achieve by conducting diagnostic examinations on suspected diseases and by regular execution of contaminated game. In this sense, regular examinations of animal organs and tissue must be conducted, as well as simultaneous elimination of animal carcasses in the hunting areas. Only

carcasses inappropriate for examinations are mentioned above.

Collecting materials for coprological examinations is suggested as a regular measure and a component of monitoring process. The materials should be collected twice a year.

Moreover, having in mind everything said above, we have to suggest the conclusion that prevention from the practical aspect is more acceptable than disease treatment as well as the fact that good governing of hunting areas must include employment of well-organized experts who would work on regulating and protecting habitats. By doing so, they would simultaneously prevent diseases.

Summarizing everything mentioned above, it is important to point out the importance of experts' work and efforts on preventing zoonoses and parasitosis outbreaks and expansion.

This paper refers to measures of conducting quarantines on new game, controlled circulation of cattle and cattle's products and trade control of killed animals and their parts.

It surely wouldn't be wrong to conclude that there is not enough knowledge about the frequency of a particular game disease outbreaks, their range and expansion, and as well as to conclude the fact that some special attention is not paid to it.

Moreover, the real direct damages caused by game diseases and damages caused by hunting are still unknown. That is why it is important to stress the importance of complete game monitoring in the whole area of Bosnia and Herzegovina. So far, only individual samples have been analyzed. In this way, only sporadic cases are observed and these cases do not submit an insight into the percentage portion of some disease, and they are indicative only when an

epidemic spreads in some area. In a word, the preventive action, due to which monitoring is usually established is lacked.

On the contrary, monitoring which would be based on a delivery of dead game and based on a delivery of organs and the total amount of killed animals would represent a vastly detailed base for preventing diseases and its treatment (Torsten, 2002; Couacy-Hymann et al., 2005). Naturally, this could only be applied on game in which such changes were noticed upon medical dissection. Would the triage be conducted on every hunter's hunting experience (empirica) or education of the so-called meat examiners in every hunting area, as it is frequent in some counties as their regular practice, is a less important question. It is important to stress that this model should be based on a proper legislative and it should be supported by premium payments for every game delivered for an examination. Initially, this monitoring could be implemented on a certain territorial unit- as a pilot program. Security officers are interested to support this initiative, and hunters, besides health protection, which is their primary concern, would be able to use the financial funds that exist for these purposes under the EU program and are designed for countries that are not members of the Union. Unfortunately, there is a lack of coordinated action based on which these funds would be claimed and used in Bosnia and Herzegovina.

On the other hand, all organized breeding that is based on keeping numerous animals in limited space, without any regard to applied technology and nutrition, can not be satisfied by probing of population's health conditions. Even coprological examination at two sittings cannot be enough. For such breeding, it is extremely important to apply DDD measures. Considering the fact that it

## Značaj koordiniranog monitoringa u kontroli pojave i širenja bolesti divljači u Bosni i Hercegovini

### Sažetak

U radu je prikazana problematika provođenja mjera u kontroli zdravstvenog stanja divljači kao izvora i vektora zaraznih bolesti. Kontrola pojave i širenja bolesti divljači u Bosni i Hercegovini. Kako još uvijek nisu poznate stvarne direktne štete uzrokovane bolestima divljači a niti one nastale lovnim gospodarenjem naglašava se važnost monitoringa divljači za cijelo područje zemlje. Analiza pojedinačnih uzoraka uginule divljači odnosi se u stvari samo na sporadične slučajeve koji ne daju uvida u postotni udio neke bolesti, a indikativni su samo tek kada se na nekom području epidemija razvije. U uspostavi monitoringa naglašena je dobro osmišljena i kvalitetna koordinacija veterinarske i lovne struke.

**Glavne riječi:** divljač, monitoring

## Die Bedeutung des koordinierten Monitorings in der Kontrolle der Entstehung und Verbreitung der Krankheiten bei Wild in Bosnien und Herzegowina

### Zusammenfassung

In der Arbeit ist die Problematik der Maßnahmendurchführung in der Kontrolle des Gesundheitszustandes bei Wild dargestellt, der als Quelle und Vektor von Ansteckungskrankheiten gilt. Die Kontrolle der Entstehung und Verbreitung der Krankheiten bei Wild in Bosnien und Herzegowina. Da wirkliche direkte Schäden verursacht sowohl durch die Krankheiten des Wildes als auch durch die praktizierende Jagdwirtschaft nicht bekannt sind, wird die Bedeutung des Monitorings von Wild für das ganze Landesgebiet akzentuiert. Die Analyse der einzelnen Muster der verendeten Tiere bezieht sich nur auf sporadische Fälle, die keinen Einblick in das prozentuelle Einteil einer Krankheit ermöglichen, und sind nur erst bei dem Ausbrechen der Epidemie auf einem Gebiet indikativ. Bei der Instandsetzung von Monitoring wird eine gut durchdachte und qualitative Koordination des veterinärischen Faches und des Jagdfaches betont.

**Schlüsselwörter:** Wild, Monitoring

## Importanza del monitoraggio coordinato nel controllo di apparizione e diffusione di malattie di selvaggina in Bosnia e Herzegovina

### Sommario

L'articolo tratta la problematica di messa in corso di misure nel controllo di stato di salute di selvaggina come la fonte e il vettore di malattie contagiose. Il controllo di apparizione e di diffusione di malattie di selvaggina in Bosnia e Herzegovina. Come tutt'ora non sono conosciuti i danni reali diretti, causati da malattie di selvaggina, ma nemmeno quelle apparse a causa di caccia controllata, il monitoraggio viene estremamente importante per tutto lo stato. L'analisi di campioni isolati in realtà si riferisce solo ai rari casi che non rivelano la percentuale di una malattia, e sono indicativi solamente quando l'epidemia si espande per un'area. Il monitoraggio poco a poco diventa una buona abitudine dalla quale è molto importante una coordinazione ben ideata e di qualità tra la professione veterinaria e quella di cacciatori.

**Parole chiave:** selvaggina, monitoraggio

is not possible to eliminate all rodents, mice and voles by rat poisoning, it is crucial to control and decrease their number by these measures. The rest of their population should be submitted to serological, microbiological monitoring twice a year in order to get the complete view into the pathology of this numerous population, which seems irrelevant in the hunting economy. Beside the so called "soil pathology", it is well known that the most important source and vector of infectious diseases are rodents (Margaletić et al., 2001). Organized breeding with minimal reproduction, high mortality rate, where technology is the aim to itself is not justified. For this reason, a well-planned and high-quality coordination of veterinarians and hunters is necessary, as well as it is important to work on it seriously in the following period.

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