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Analysis of the strategy developed for control of the disease African swine fever (ASF) in Bulgaria by reducing the wild boar population

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Abstract

All applicable control and eradication measures for African swine fever (ASF) shall be based on classical methods of disease control, including surveillance, epidemiological surveillance, monitoring of pigs and their destruction on infected holdings.

In this paper we aim to analyze how the Strategy for combating ASF in Bulgaria should be applied to control the spread of ASF, as well as to what extent it identifies and characterizes the existing and potential risks and their sources.

To evaluate the proposed strategy, we used a comparative method, based on which we compared to what extent the main risk factors for the spread of the disease from the EFSA scientific assessment of the risk of ASF spread in Southeast Europe and the requirements of the OIE Terrestrial Animal Health Code were taken into account.

We can summarize that the Strategy should be improved by taking into account the comments made and to prepare an operational plan.

Keywords: Risk assessment, African swine fever strategy, animal health control

Introduction

African swine fever (ASF) is a highly contagious and deadly disease in domestic and feral pigs that is transmitted through direct and indirect contact, ingestion of contaminated feed and certain vector tick species. ASF is considered one of the most dangerous diseases in pigs, affecting trade and having a serious socio-economic impact on human livelihoods ^[1, 2].

The South- European countries continue to report new ASF cases in domestic and wild pigs as the wild boars population outbreaks considerably increased. Bulgaria together with Romania and Poland are leading countries with the biggest numbers of ASF outbreaks. The positive control efforts can lead to reducing the frequency of the cases in domestic pigs but the wild boar population continues to be a significant threat and reservoir of the disease for the South-European countries.

The risk analysis is focused on the assessment of the probability of ASF spread in the frame of the separate regions in Bulgaria as well as the probability of the spread in Rumania or other non-infected countries. The Risk Assessment Center on Food Chain (RACFCh) ^[3] made an assessment on the factors which could influence the spread of the diseases, eventually the spread direction to different regions of the country and to assess whether some of them are exposed to higher risk of spread than the other ones.

Due to the fact that no vaccine has yet been developed to prevent the disease, the old maxima that prevention is better than cure applies in full force to ASF. To control the spread of the disease in 2018 the Bulgarian Food Safety Agency has developed a Strategy for Combating ASF in Bulgaria ^[4], which is based on early detection of the disease, implementation of strict control and biosecurity measures in pig farms and maximum reduction of the wild boar population in the affected and neighboring regions. It includes the measures for prevention and early detection of the ASF disease. It envisages:

- Permanent meetings with the hunting groups' leaders where to be updated about the ASF situation in the region and the country, the risk of the penetration of the disease into country.

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- Intensified shooting and maximal reduction of the wild boar population in the frame of the agreed shooting plan as the particular attention is given to the region among Danube river and the lend borders with Romania as well as the regions where the Ester Balkan pigs are kept.
- Immediately reporting to the official veterinarian about all carcasses of dead wild boars, the change of the health status of the pigs and their behavior or internal organs during the primary dressing of the shot wild boar.
- Wild boars blood and organ samples from lien, kidney, lymph nodes, tonsils (taken from all shot, found and sick wild boars)

Materials and Methods

In this paper we aim to analyze how the Strategy should be applied to control the spread of ASF, as well as the extent it identifies and characterizes the existing and potential risks and their sources (including institutional risks), whether they are analyzed, the causal links and interdependencies, possible consequences (direct, indirect, chain, network and cascade effects of their implementation), as well as countermeasures in different scenarios, their technical, social, organizational, institutional, financial and economic feasibility. In this way, one of the basic requirements in risk management will be fulfilled; it will be based on a preliminary risk assessment.

To evaluate the proposed strategy for combating ASF, we used a comparative method, based on which we compared to what extent the main risk factors for the spread of the disease from the EFSA scientific assessment of the risk of ASF spread in Southeast Europe ^[5], the requirements of the OIE Terrestrial Animal Health Code ^[6] and Decision 2014/709/EC ^[7] were taken into account.

Results and Discussions

As an outcome of the analysis of the 2018 a Strategy for Combating ASF in Bulgaria we can deduce the following:

1. Regarding the purpose of the strategy

In principle, the strategy present one declared intention and the ways of realization of this intention. That's why it should have clearly set final strategic goals (to determine the final results) and operational goals (to describe the steps and intermediate results on the way of the goals' achievements). Those goals should be chosen on the basis of deep analysis of the existing and the potential risks of the introduction of ASF into territory of Bulgaria and the consequences from them refracted through the prism of the conditions and efficiency of the existing mechanisms (level of protection), vulnerabilities and weaknesses of the animal health system in order to determine its tolerance ("level of accepted risk").

2. Regarding the animal byproducts' disposal in rendering plants

As regards the disposal and destroying of the enormous quantities of animal carcasses and infection material (at the development of an ASF epidemic in Bulgaria) it is of outmost urgency to elaborate action plan including the capacity of two rendering plants in city of Shumen and city of Varna if ASF occurs. Hence, the matters associated with the working conditions of the two rendering plants, the collection and disposal of the carcasses, the slaughterhouse byproducts, the kitchen and household waste.

3. Regarding the laboratory testing and lab security

A special chapter of the strategy should be dedicated to the lab security of the ASF National referent lab. All the samples from the technological fall in the pig industry which for one or another reason does not have the final diagnosis should be directed to the ASF National referent lab.

4. Regarding the active and passive ASF surveillance

The part of the strategy dealing with the passive and active surveillance and assessment of the risk (before the occurrence, during the spread and after eradication of the first outbreaks of the disease and holding reproduction)

5. Regarding the biosecurity measures

Other important elements from the strategy are the biosecurity measures in the pig industry which are envisage preventing the penetration of the disease in the herds and groups of animals where it does not exist at the present moment or to limit its spread out from the infected animal holding or population. This is hundred percent valid for the East Balkan pigs kept free in the oak forests in Eastern Bulgaria.

The effective biosecurity measures are important criteria for setting the disease free status of the animal holdings, farms and zones and for the restrictions posed on trade with live pigs and pig products of any category.

6. Regarding the reduction of the wild boar population in Bulgaria

A special chapter of the strategy should be dedicated to intensified shooting and maximal reduction of the wild boar population in the frame of the agreed shooting plan as the particular attention is given to the region among Danube river and the lend borders with Romania as well as the regions where the Ester Balkan pigs are kept. It is also need to reassess the maintenance and monitoring of the lend fence along side with the lend border with Romania.

7. Regarding the development and setting up of hopeful indicators for assessment of the achieved intermediate and final results

Regarding the development and setting up of hopeful indicators for assessment of the achieved intermediate and final results it is necessary to be guaranteed that the measures for prevention, reduction and control of the risk of penetration and spread of ASF as envisaged in the Strategy should be based on the elaboration of the simple and reliable indicators for the assessment of the intermediate and final results of the implementation of the Strategy supporting the measurement of the progress by the assessment of the resources used for the achievement of the strategic goals of the strategy. They shall be developed in consultancy with the interested parties and being updated by the time. A monitoring system has to be set up which final target has to be achievement of effective use of the resources in particular to control coefficient of efficiency and productivity with minimal expenditure of funds and time. It is also necessary to check to what extend the achieved results contribute to final goal in short-term, medium and long-term aspect (effectiveness and adequacy in tasks performance). The monitoring will help to find out if the implementation of the strategy is a satisfactory or if not what kind of corrective actions should be undertaken.

Conclusions

Based on the above, it could be concluded that of outmost importance is that the Strategy needs to be updated on the basis of the analysis done. It is necessary an action plan to be elaborated as well in which in details the specific goals and the results expected at every step should be written down.

Acknowledgments

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