

4th OIE webinar on African horse sickness:

AHS' eradication strategies

28 April 2020

Questions & Answers

VECTOR CONTROL AS ERADICATION STRATEGY

1. Do you recommend the combination of vector control and a strengthened screening (with active surveillance) to control AHS? *In an outbreak situation, vector control has to be started immediately. The horse owner would control vectors and screen the accommodations and at the same time the disease is notified ensuring that passive surveillance complemented by active surveillance is carried out by Veterinary Services. These activities should go hand in hand.*
2. About the massive insecticide application in outdoor areas, is there any evidence on the efficacy of the application of such methods? Is there potential side effects on other insects such as pollinators? *The potential impact of massive insecticide application on the environment is of major concern. It is very difficult to assess the effect on non-target insects of insecticides effective against midges. Although specific data are missing, a temporary negative impact cannot be excluded.*

ISOLATION vs STAMPING OUT & COMPENSATION

3. Given the high mortality rate of AHS in horses, what is the advantage of isolating viraemic horses rather than culling them?

In an outbreak situation, it is important to interrupt as quickly as possible the virus transmission from equine animals infected or suspected of being infected with the AHS virus to the attacking vector population. While culling is a robust response to an AHS outbreak, any alternative measure has to be decided taking into account the welfare of the animal, the effectiveness and efficiency of the alternative measures, the value of the animal and the chance of its survival, and most important, the acceptance of the measures by the affected owners, keepers and the larger public. In particular the latter may have significant consequences for disease reporting, passive surveillance and adherence to movement restrictions.

In current EU legislation culling of the infected with or presenting clinical symptoms of African horse sickness is the prescribed method. Since the clinical signs may not be pathognomonic, and thus lead to over-reporting, and taking into account that the case fatality rate may be as high as 90% but is not necessarily 100%, future EU legislation on the control of African horse sickness foresees the isolation of the viremic mammalian host animal from vector insects as an optional measure that may be applied by way of derogation and under strict conditions.

4. How do you evaluate the compensation cost for horses? should it cover only clinically sick animals or also healthy one (as a control measure)? *Compensation of horses is complex as the value of horses varies substantially from low value animals, but important for the livelihood of the owner, to slaughter price, to market and auction prices and fancy-prices in millions of Euro/Dollar). Each country will have a different strategy, but frequently there is a ceiling for different categories of equidae. What is important in terms of compensation is to have a legal basis and the capacity in the national context to proceed with a timely compensation of animals lost due to a notifiable disease or the measures to control such disease.*

VACCINATION

5. Is there any risk of disease perpetuation in case of use of attenuated vaccines in former disease free territories? How do you manage this risk of vaccine strains being carried by vectors into disease free zones/countries? This is a risk inherent to live attenuated vaccines. Vectors can indeed spread the virus of the vaccine strain; the previous webinar on insect vectors (AHS webinar #3) provided recommendations on how to prevent vaccinated horses to be bitten by midges.

In Morocco, the vaccine strain continued to circulate for several years, but the viral load was progressively reduced. This circulation did not impact horse health status.

In the Middle East, antibodies of AHS strains that had never circulated in the area were detected. Good registration and differentiating laboratory tests allowed to conclude that the horses had been vaccinated with a polyvalent vaccine.

Another risk is linked to the illegal import of vaccines, which is not uncommon in time of outbreaks. The experts had noted that there were number of South East Asian professionals trying to source AHS vaccine on Internet.

6. Considering that the risk of reassortment is higher if large number of animals are vaccinated with polyvalent vaccines than if small numbers are vaccinated, what would be your recommendations for the number of horses to vaccinate? The risk of reassortment exists between strains in a polyvalent vaccine, but also between a vaccine strain and a field strain (in an infected animal). When you plan for annual vaccination, you should rather choose a period with limited vector circulation. This should not prevent emergency vaccination to control AHS.
7. Would a one-off injection of a polyvalent vaccine provide protection?

Vaccination against AHS should be carried out according to manufacturer's instructions. In the case of live attenuated AHS vaccine from Onderstepoort Biological Products the recommendation is available at:

https://www.obpvaccines.co.za/resources/products/4AR2ZW46HZAJAFDB/2063_AHS_PI.pdf

and advises inter alia as follows: "It takes up to 2 – 3 vaccinations for horses to become immune to all the serotypes in the vaccine."

In the Moroccan experience, monitoring antibody response, it was observed that one injection was not enough to cover one year protection for naive animals vaccinated with the monovalent Serotype 4. It was recommended to revaccinate 4 to 6 months after the primary vaccination.

8. Can field vaccination be considered as part of the control measures to be implemented at an early stage when AHS has just been detected? That decision will depend on the country and the infrastructure available, vaccination is a very efficient tool, but should be applied in parallel with other measures, such as identification and registration of vaccinated animals.
9. How long after vaccination can a horse be moved from one zone to another? There may be different scenarios. EU legislation and OIE standards allow the movement of vaccinated horses from infected areas under specific requirements (for the OIE: Article 12.1.7.¹).

ZONING

10. Is there any scientific evidence to support the size of the radius of the different zones, and particularly the 20-km zone? The 20 km radius area is an emergency area where resources have to be concentrated first. 20km radius is a huge area of 1256 km² and with a perimeter of 126 km that needs to be controlled, and the choice is mainly a matter of feasibility. The 100-km zone is more related to the airborne spread of midges. These distances have been used successfully in

¹ https://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_ahs.htm

South Africa. There is a wealth of information on the modelling of airborne spread of midges in the context of the control and eradication of bluetongue.

11. How EU ensures that the free zones in other countries maintaining the status? Imports of equidae into EU are only allowed from authorised countries and in some cases from certain parts of the territory of those countries. One of the conditions for the authorisation of such imports is the listing of the country of export according to established criteria. The listing may, and in case of live animals does, include an on-the-spot audit or inspection, which is periodically repeated depending on the quantities and other risks associated with the imports of animals. The OIE recognition of an official health status is an important factor in the prioritisation of the audits carried out by a specialised Directorate within DG SANTE of the EU Commission. In case of an outbreak of a notifiable disease the entry into the Union of live equidae may be suspended or subject to reinforced controls or additional test, vaccination or quarantine measures.

SITUATION IN THAILAND

1. What is the status of the investigations on the source of AHS introduction into Thailand? In-depth investigation is still on-going. This is a long-distance spread from Africa. However, since zebra is also a susceptible host, as wild species, are not under the responsibility of the Thai VS (DLD = Department of Livestock Development) before the occurrence of AHS. A workforce has been set up (DLD + Department of National Parks and Academics) to conduct surveillance and health protocol for zebras.
2. What control methods are used for working horses and donkeys that do not have access to insect proof stables? All the equids are in standstill. All horse owners have been informed how to protect their animals (when they should stable them, use insecticides, use mesh...) For working equids, DLD is responsible of providing protective nets to protect them.
3. What control measures are set in place on the ground to control movement of horses during the outbreak? A movement restriction has been imposed for all equids. This is a provincial declaration (by the Provincial Government), based on the Animal Epidemic Act 2015. An official letter from DLD has requested cooperation from other agencies (policy, public health, army) to benefit from the Covid19 checkpoints.
4. What is reason for choosing a polyvalent vaccine rather than a monovalent? DLD is concerned about using the polyvalent live attenuated vaccine. Since it was an emergency, that was the only available vaccine at the time and contained serotype 1, the serotype that is causing AHS outbreak in Thailand.
5. what is the medium-term strategy for vaccination in Thailand? Will there only be a one-off vaccination? DLD planned to use vaccine only at the first stage of AHS control in order to reduce the number of cases. After all the horses at the distance of 50 km from the 6 infected sites are vaccinated, titer and clinical surveillance reports will be used for evaluation and plan for the next step.