Technical Sheet for Solution Implementation

West Nile Fever Vaccination


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Thematic Area: Health and Welfare.

Priority: What practices can be implemented to promote biosecurity measures and prevent emergent diseases?

Need: How to prevent West Nile virus; which are the biosecurity measures.

Solution EU Number: HE-02.

Content of the Solution: Information, advantages and disadvantages of the West Nile fever vaccination for horses.

Key Contacts:

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Reasons for Implementing this Solution

As direct control of the virus in the infected animal is not possible West Nile virus vaccination in horses is an effective way of protecting horses from infection and, above all, preventing a severe course of the disease. It is particularly recommended for horses living in or temporarily staying in areas with a higher risk. Vaccination reduces the clinical signs of the disease, brain damage and viremia. In some cases, the virus can cross the blood-brain barrier and reach the brain, leading to more or less marked nervous signs and even death.

Description of Solution Strategies

West Nile fever is transmitted by mosquitoes of the genus Culex. Preventing mosquito bites can be complicated, if not impossible, in certain equidae (for example, equidae living outdoors, extensively, in marshy areas). Vaccination therefore appears to be the preventive solution of choice in a large number of situations. It can be used in conjunction with other measures to limit mosquito bites (mosquito repellent blankets, repellents, limiting stagnant water : see the technical sheet HE-3 Limit the population of the transmission vector: mosquito).

3 vaccines against West Nile fever in horses are authorised in the EU:

- EQUILIS WEST NILE SUSPENSION INJECTABLE POUR CHEVAUX (INTERVET INTERNATIONAL B.V.), EU/2/13/151
- EQUIP WNV EMULSION INJECTABLE POUR CHEVAUX (ZOETIS BELGIUM), EU/2/08/086
- PROTEQ WEST NILE SUSPENSION INJECTABLE POUR CHEVAUX (BOEHRINGER INGELHEIM VETMEDICA), EU/2/11/129

They are used to actively immunise horses against West Nile Virus (WNV) in order to reduce the clinical symptoms of the disease, damage to the brain and virus excretion.

Vaccination schedule:

- Basic immunisation: 2 vaccinations at intervals of 3 - 5 weeks; followed by annual booster vaccinations.
- Start of immunity: 4 weeks after the first dose of basic immunisation. In order to obtain full protection, the basic immunisation must be fully completed. The 2nd primo-vaccination injection should be given at least 2 weeks before the period at risk (this is when immunity develops).
- Duration of immunity: 1 year after completion of basic immunisation : The annual booster is given in the month preceding the risk period, which depends on mosquito activity and may vary according to the geographical location of the equidae.

The vaccine can be used in foals from the age of 5 - 6 months and in pregnant and lactating mares.

The basic immunisation of horses should be completed in early spring so that the animals can build up sufficient immune protection before the start of the mosquito season. The timing of booster vaccinations should also be planned according to mosquito activity and may vary depending on the geographical location of the equidae.

The same applies to all vaccines: even vaccinated horses can become infected with WNV. However, the vaccination provides the greatest possible protection against the disease and is particularly safe against severe cases. The WNV vaccination is a safe protective measure for horses that are kept in the areas where the virus spreads or are only brought there for a short time (e.g. competitions, training, trail rides).

It is recommended to vaccinate equidae living in areas where the West Nile virus has already circulated.

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Implementation Steps

1. **Obtain veterinary advice:**
   - Risk assessment (region, husbandry, travelling activity).
   - Vaccine selection and individualised vaccination protocol.

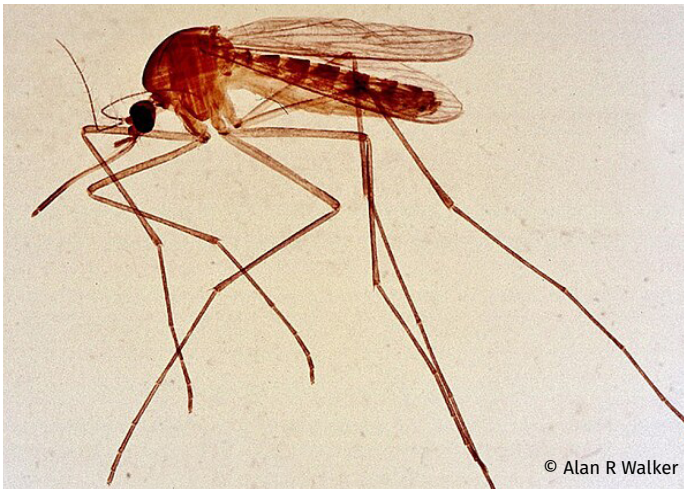
2. **Inform horse owners if necessary:**
   - Risk assessment (region, husbandry, travelling activity).
   - Vaccine selection and individualised vaccination protocol.

3. **Create a vaccination schedule:**
   - Schedule the basic immunisation (2 vaccinations 3-5 weeks apart).
   - Start early in spring, at least 4 weeks before mosquito season.

4. **Plan annual booster vaccinations:**
   - Adapt timing to local mosquito activity.

5. **Carry out & document vaccination:**
   - Vaccination date, vaccine, batch number.
   - Observe side effects or vaccination breakthroughs.

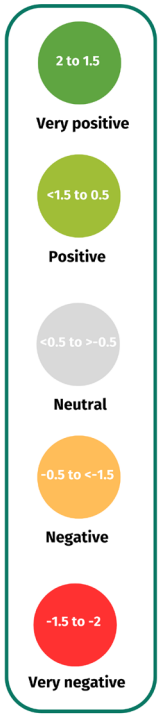
6. **Implement accompanying mosquito protection measures:**
   - Insect repellent blankets, repellents, reduce water points.



West Nile Fever Vaccination

How Will this Solution Impact the Performance of your Farm ?

TOPIC	SCORE
Social	0.50
Economics	1.00
Welfare	0
Health	2.00
Environmental	0
Land access and management	0
Global	0.58



Color coding explanation

Socioeconomics: This solution will support the social performance of the farm because its preventive approach promotes a responsible image of the farm, contributes to better horse health and collective disease control, especially if the disease spreads. This solution will support the economic performance of the farm because it helps reduce long-term disease-related costs and could stimulate vaccine demand, potentially lowering prices through increased production.

Health & Welfare: This solution will support the farm health performance due to evident benefits directly related to the resistance of animals facing west nile fever. Directly, this solution will have no effect on the welfare performance of the farm.

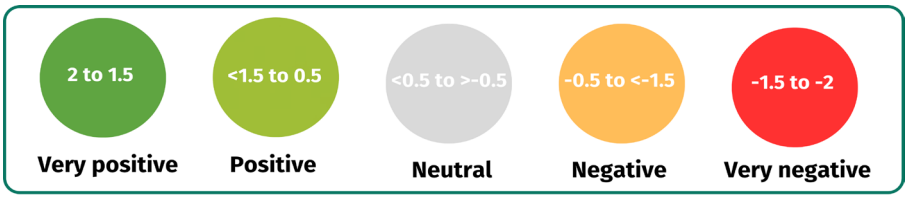
Environmental Sustainability: This solution will not have effect on the environmental performance of the farm because there's no direct impact on sustainability from this solution. This solution will not have significative effect on the land access or management performance of your farm because here's no evident impact on land access or management from this solution. The farm can potentially leave its horses in wetter areas where the risk is higher so it can slightly help the farm to access more easily to lands in some regions.

Globally, this solution should support the performance of the farm.

West Nile Fever Vaccination

How Will this Solution Impact the Resilience of your Farm?

TOPIC	SCORE
Social	0.17
Economics	0.08
Welfare	0
Health	0.17
Environmental	0
Land access and management	0.50
Global	0.11



Socioeconomics: This solution will not impact social performance of the farm facing external challenges assessed because, although it may slightly increase public support for preventive actions, its effects are limited under stable or low-risk conditions — however, this could change in high-risk areas or if the affected region expands in the coming years. This solution will not impact economic performance of the farm facing external challenges assessed because the long-term benefits of preventive vaccination are scenario-dependent and may not justify the cost in areas with low disease risk.

Health & Welfare: When the farm faces various external challenges, its health performance will be only slightly supported by this solution—and specifically in relation to West Nile Virus disease (WNV). Moreover, this solution does not directly enhance the farm's welfare performance, as it does not necessarily lead to an improved emotional state for the horses or better living conditions, particularly when the farm is confronted with various external challenges.

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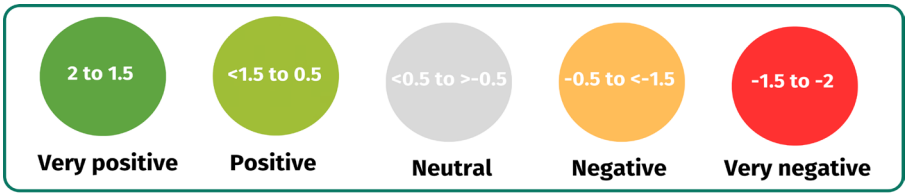
How Will this Solution Impact the Resilience of your Farm?

Environmental Sustainability: This solution will not impact environmental performance of the farm facing external challenges assessed. This solution could have a positive impact on land access performance facing external challenges assessed because it can allow the farmer to let the equine access to wetter lands or lands with higher risk that could be banned in the past due to high risk of bites and west nile fever.

Globally, this solution will have a neutral effect on the resilience of the farm, so it will not impact significatively its performance facing the challenges assessed because the effect will depend on whether a west nile crisis occurs in addition to these challenges. The resilience will be positively impacted in case of West Nile crisis and not impacted if no crisis.

How Can this Solution Help your Farm Cope with Specific External Challenges to Become More Resilient?

CHALLENGES	SCORE
Inflation	0
Pandemic	0.08
High welfare standards	0
High infectious diseases	0.25
Extreme weather event	0.33
Loss or limited access to grassland	0



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How Can this Solution Help your Farm Cope with Specific External Challenges to Become More Resilient?

Inflation & Social Crises: This solution will have a neutral effect on global farm performance facing inflation because the effect can be positive in case of West Nile crisis (less drug costs, better health etc) but also negative (increase of vet costs) if no crisis.
This solution will have a neutral effect on global farm performance facing pandemics for the same reasons. The effect can be positive in case of West Nile crisis (if less horses contaminated, less work and less costs) but if no crisis no effect.

Welfare & Diseases: This solution will not significantly influence the farm's global performance facing infectious diseases, as it does not provide protection against other types of disease challenges but specifically against a West Nile Virus (WNV) disease outbreak. Also, does not contribute to support environmental performance facing this type of challenges. Additionally, it has no direct impact on the farm's global performance when it has to adapt to the demands imposed by high welfare standards legislation as it does not contribute to enhanced it directly.

Climate Change & Access to Land: In case of hot and wet weather, which can increase the risk of transmission of West Nile due to proliferation of mosquitos, this solution can support the resilience of the farm thanks to a better protection of horses (less work avoiding health crisis, less costs avoiding to many vet costs etc). But for the other types of extreme weather event, this solution will not have effect on the resilience on the farm.

In case of loss of lands, this solution will not have a significant impact on the global performance of the farm. The solution can help in this case only if some areas not valorized/grazed in the past due to high risk of contamination with west Nile can be re-affected thanks to the vaccine.

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Cost-Benefit Analysis

Costs	Benefits
Socioeconomics: • Costs for vaccines and veterinary services : around 100 euros per shot.	• Avoidance of high treatment costs in the event of illness. • Protection of economically valuable animals (e.g. breeding and sport horses). • Avoidance of loss of income in the event of loss of use (tournaments, riding, tourism). • Contribution to regional disease prevention = location advantage for breeding farms and events.
Health & Welfare: • (Minimal) risk of vaccination reactions. • Stress due to vaccination/veterinary treatment.	• Preventive protection against a potentially fatal disease. • Reduction of severe neurological disease progression. • Maintaining quality of life and performance. • Improved healthcare in regions at risk. • Reducing the burden on veterinary clinics in the event of illness.
Environmental Sustainability : • Production, transport and disposal of the vaccine.	• Reduced use of symptomatic medication (e.g. anti-inflammatory drugs, antibiotics). • Less animal transport for treatment.

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Cost-Benefit Analysis

Costs

Cooperation between farms:

- Different vaccination levels can lead to uncertainties.
- Coordination effort for joint implementation/regional vaccination campaigns.

Benefits

- Coordinated vaccination measures offer nationwide protection and reduce regional outbreak risks.
- Joint organisation reduces costs and logistical effort per farm.
- Growing demand for vaccines can lead to higher production volumes and lower prices in the long term.
- Greater market transparency and improved supply situation.

Additional Resources

Websites

- English:
  - Interactive map of outbreaks and cases of West Nile fever in Europe (in English): https://shiny-public.anses.fr/shiny-vsi/
  - Friedrich-Loeffler Institute – Federal Research Institute for Animal Health: https://www.fli.de/en/news/animal-disease-situation/west-nile-virus/
  - Equipedia: https://equipedia.ifce.fr/en/equipedia-the-universe-of-the-horse-ifce/health-and-animal-well-being/diseases/nervous-system/west-nile-fever

- French:
  - https://equipedia.ifce.fr/sante-et-bien-etre-animal/maladies/systeme-nerveux/fievre-de-west-nile
  - Assessment of the 2022 West Nile fever season in Europe (in French): https://www.plateforme-esa.fr/fr/bilan-de-la-saison-2022-de-fievre-west-nile-en-europe

- German:
  - Friedrich-Löffler Institut: https://www.fli.de/de/aktuelles/tierseuchengeschehen/west-nil-virus/
  - Niedersächsische Tierseuchenkasse: https://www.ndstsk.de/uebersicht/leistungen/1270_das-west-nil-fieber.html
  - Boehringer Ingelheim: https://www.vetmedica.de/produkte-tierarzt/Pferd/proteq-west-nile/5001
  - MSD Tiergesundheit: https://www.msd-tiergesundheit.de/produkte/equilis-west-nile/

Webinar/Webconference

- French: https://www.ifce.fr/ifce/connaissances/webconferences/sante-et-bien-etre-animal/west-nile-un-virus-responsable-depidemies-imprevisibles/

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Annex

Ideas to Ideas to Animate a Workshop about the Solution

- **Sponsorship & Partnerships:** Approach a vet or an animal health company (especially vaccine manufacturers, or advisors) to sponsor the workshop or provide materials.

- **Find a Model Farm:**
  - Host the event at a horse facility where WNV vaccination is already implemented (e.g. riding school, stud farm) to give participants a real-life perspective.
  - Invite a farmer to participate to an activity (round table) to share its experience regarding West Nile and discussing it with vets and experts for examples

- **Involve Participants Actively:** Let attendees take part in practical elements such as risk assessment, planning a vaccination schedule, or simulated decision-making around vaccination timing.

Proposed structure for the workshop on WNV Vaccination in Horse Facilities

1. Introduction to WNV Vaccination
- What is West Nile Virus? Transmission, symptoms, risk areas.
- How does vaccination work? Purpose and mechanisms.
- Overview of available vaccines: types, components, differences.

2. Benefits of WNV Vaccination in Horse Facilities
- Prevents severe illness, neurological symptoms, and death.
- Reduces veterinary treatment costs and potential downtime.
- Supports animal welfare and responsible disease prevention.
- Integrates into broader herd health management strategies.

3. Practical Application on the Farm
- When and how to vaccinate: Primary vaccination, boosters, planning.
- Special considerations for foals, pregnant mares, or sport horses.
- Aligning vaccination with seasonal mosquito risk.

4. How to Plan a Suitable Vaccination Strategy
- Risk assessment: Which horses, which areas?
- Choosing the right vaccine in consultation with the vet.
- Record-keeping and communication with owners or staff.

5. Hands-On Segment: Vaccination Planning & Case Scenarios
- Create a sample vaccination calendar for various farm types.
- Role-play: What to do when travelling to a WNV risk zone?
- Discussion with farm managers who already use the vaccine.

6. Maintenance, Monitoring & Boosters
- Booster scheduling and follow-up.
- Managing missed doses or adverse reactions.
- Veterinary documentation and passport updates.

7. Case Studies & Best Practices
- Examples of farms successfully using WNV vaccination:
  - How they integrated it into daily operations.
  - Insights and tips from horse owners or managers.

8. Cost Analysis & Return on Investment
- Vaccine costs vs. disease management costs.
- How to calculate ROI for different farm sizes and risk levels.
- Group initiatives or subsidies (if available).

9. Q&A Session
- Open floor for questions about vaccine use, effectiveness, timing, and challenges.
- Share doubts or previous experiences and get expert input.

10. Wrap-Up & Resources
- Summary of key workshop takeaways.
- Distribution of a handout with a sample vaccination schedule, risk checklist, and vet contacts.
- List of resources (websites, suppliers, expert networks).
- Option to register interest in a joint vaccination campaign or consultation.