Technical Sheet for Solution Implementation

Equine Biosecurity: Quarantine and Health Monitoring Measures for New Arrivals

Thematic Area: Health and Welfare of Equines.

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

Need: Biosecurity/health prevention: how to implement it?; How to improve the implementation of biosecurity on farms?; How to access the right tools?; What health protocols should be put in place?; How to define and promote good health practices?

Solution EU Number: HE-09.

Content of the Solution: Preventive quarantine measures and health monitoring for new or suspicious horses to protect existing stock from infectious diseases.

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Reasons for Implementing this Solution

Quarantine and health monitoring measures for newly introduced horses are intended to reduce the risk of introducing contagious or vector-borne diseases into a stable. Even clinically healthy animals may be in the incubation period of a disease or act as asymptomatic carriers, posing a risk of infection to other horses

Description of Solution Strategies

Quarantine involves the temporary and strict isolation of newly introduced horses in a dedicated area, with no direct or indirect contact with resident horses.

Duration of Quarantine

The recommended minimum duration of quarantine is 14 days. This period exceeds the incubation time of the most important transmissible equine diseases. Depending on the epidemiological situation, the horse's age, origin, type of transport (individual vs. group), and health status, the duration may be adjusted.

Quarantine Area

A designated area must be used exclusively for quarantine purposes. Ideally, this area is located at least 50 meters away from housing or working areas used by resident horses and positioned on the periphery of the facility. Depending on the facility layout, the area may consist of a stall, box, or paddock.

In a single, continuous barn setup (which is not ideal), the quarantine stall should be located at the far end. These boxes must be separated from each other by a solid wall.

The quarantine area must be clearly marked, with access restricted to authorised personnel only.

A minimum set of dedicated equipment (e.g., a thermometer, a halter, grooming tools and cleaning tools) must be made available for use in the quarantine zone only.

Management of the Quarantine Zone
Ideally, only a limited number of staff should be responsible for caring for quarantined horses. They should take care of these horses last in their routine. Handwashing and footwear cleaning is mandatory before moving on to other horses. There should be a washing station located near the quarantine area. If this is not feasible, disposable gloves, overshoes or hand sanitiser must be provided and used.

Once a horse has left the quarantine area, all equipment, feeders and drinkers must be cleaned and disinfected. Paddocks should remain horse-free for at least 48 hours.

Health Monitoring During Quarantine
Close clinical monitoring during quarantine is essential:

- Temperature should be measured twice daily
- The horse should be checked for coughing, nasal discharge, appetite, and behavior

In addition, the following should be verified and addressed:

- Vaccination status (ideally checked before arrival and updated if needed)
- Deworming status: If a deworming protocol is in place, a coproscopy should be performed. Horses with a heavy parasite load must be treated with a molecule that is suited to the health situation of the farm and depending on whether there is resistance to a particular molecule in the area.
- Depending on age, origin, and risk level, additional testing may be indicated for the following diseases:
  - Equine Infectious Anemia (EIA) – a fatal, incurable disease with mandatory euthanasia in many European countries. An infected horse may show no clinical signs for several years.
  - Strangles – a highly contagious disease that may persist silently in the guttural pouches.

Tips: if you cannot have a dedicated quarantine area, the isolation box (Isobox developped by Equiways) can help you to manage the crisis.

Implementation Steps

1. Selection of the Ideal Quarantine Area
   - Choose a quarantine zone that optimally balances health safety, cost-effectiveness, and operational convenience.
   - Ensure sufficient distance from resident horses, easy access for dedicated personnel, and suitability for isolation purposes.

2. Procurement of Dedicated Equipment
   - Acquire all necessary items exclusively for quarantine use, including:
     - Cleaning and disinfection tools.
     - Thermometers, halters, grooming kits.

- Physical barriers, fencing, and signage to clearly demarcate the quarantine zone and communicate access restrictions.

3. Development of a Quarantine Protocol
   - Collaborate closely with the attending veterinarian and stable staff to create a comprehensive quarantine guideline.
   - Define key elements such as:
     - Organizational structure and responsibilities.
     - Hygiene and biosecurity measures.
     - Monitoring and documentation procedures.
     - Emergency actions in case of suspected disease.

4. Contextual Adaptation of Quarantine Measures
   - Regularly review and adjust the quarantine protocol based on:
     - Current epidemiological data (local outbreaks, risk levels).
     - Specific characteristics of newly introduced horses (origin, age, health status).
     - Feedback from staff and veterinary assessments.

5. Training and Communication
   - Provide training sessions for all personnel involved in quarantine management to ensure understanding and compliance.
   - Maintain clear communication channels to report health observations and escalate concerns promptly.

6. Monitoring and Continuous Improvement
   - Implement regular audits and evaluations of quarantine procedures.
   - Use collected data to improve hygiene practices, biosecurity, and animal welfare continuously.

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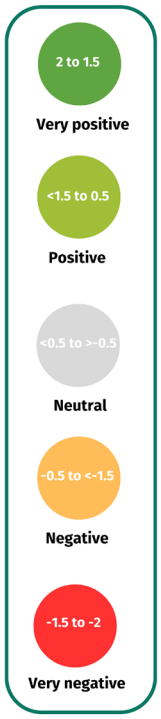
How Will this Solution Impact the Performance of your Farm ?

TOPIC	SCORE
Social	0.25
Economics	0
Welfare	0
Health	2.00
Environmental	0
Land access and management	0
Global	0.38



Color coding explanation

Socioeconomics: This solution will not have effect on the social performance of the farm because, although it may give a good public image, the measure is mostly internal and not directly visible or impactful on broader social engagement.

This solution will not have effect on the economic performance of the farm because the initial investment and increased workload from quarantine are offset by long-term savings through disease prevention, making the overall financial impact neutral.

Health & Welfare: This solution will have a positive impact on the farm's health performance by protecting vulnerable horses from the potential transmission of infectious diseases, enabling the detection of non-infectious conditions, and supporting parasite control. Overall, it does not significantly affect the welfare performance of the equine farm; however, the effects of isolation should be carefully managed.

Environmental Sustainability: TThis solution will not have an effect on the environmental performance of the farm because even if there are some small negative effects due to risk for biodiversity when biocides / disinfectants are used. In addition, there is a minor effect for water management because a water is needed to clean the stables and materials. This solution will not have an effect on the land access or management performance of your farm because horses are mainly kept in stalls, boxes or paddocks.

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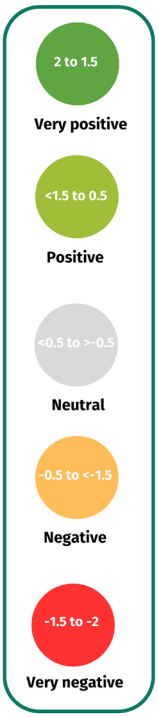
How Will this Solution Impact the Resilience of your Farm?

TOPIC	SCORE
Social	0.21
Economics	0.08
Welfare	0
Health	0.42
Environmental	0
Land access and management	0.25
Global	0.14



Socioeconomics: This solution will not impact social performance of the farm facing external challenges assessed because while it may improve public perception during a pandemic, it increases workload in times of inflation or health crises when staff shortages are likely, potentially worsening working conditions rather than strengthening social resilience.

This solution will not impact economic performance of the farm facing external challenges assessed because its costs and benefits balance out across scenarios: though it reduces veterinary expenses during disease outbreaks or drug price hikes, it requires additional labor, which becomes costly under inflation or limited workforce conditions.

Health & Welfare: This solution will only minimally enhance the health performance of the farm when facing external challenges, particularly in reducing mortality and the need for curative medication during an infectious disease outbreak. However, its benefits may be insufficient when the farm is confronted with a broader range of challenges.

Additionally, the solution is unlikely to have a positive impact on welfare performance, as social isolation can negatively affect the emotional well-being of horses by preventing the establishment of appropriate and species-appropriate housing conditions.

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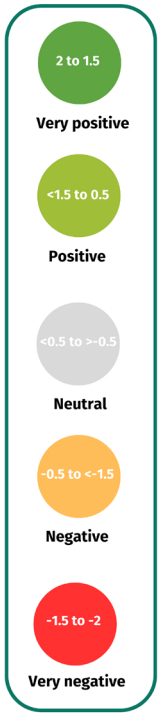
Environmental Sustainability: This solution will not impact environmental performance of the farm facing external challenges assessed because it does not have as much direct impact on climate change mitigation or adoption, halting biodiversity loss nor water management.

This solution will not impact land access or management performance of the farm facing external challenges assessed because it does not have direct impact for land access or management in these challenges.

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	0.75
Extreme weather event	0
Loss or limited access to grassland	0



Inflation & Social Crises: TThis solution will not impact the global performance of the farm facing inflation because, although it contributes to animal health and reduces the need for medication—especially valuable when drugs become more expensive—its labor-intensive nature may lead to partial abandonment due to rising labor costs and workforce limitations, unless already implemented.

This solution will not impact the global performance of the farm facing pandemics because, despite offering preventive benefits and aligning with increased public support for health measures, it requires significant staff input, which is difficult to maintain during pandemic-related labor shortages and mobility constraints.

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Welfare & Diseases: This solution supports the farm's global performance when facing infectious disease challenges. Its primary contribution lies in reducing pain, mortality rates, and disease incidence through effective environmental management.

When adapting to compulsory high welfare standards, the solution has a neutral impact on the farm's global performance. While it may cause temporary social discomfort among horses, in the long term it contributes to their well-being by protecting them from infectious and parasitic health issues.

Climate Change & Access to Land: This solution will not impact the global performance of the farm facing extreme weather events (abnormally high or low temperatures, drought, excessive raining, windstorms, flood). However, this solution could help or hinder the farm resilience depending on the situation. During extreme weather events there is more movement inside the farm, more work, which is harder to do due to harsh weather conditions. At the same time some diseases (parasitic) whose transmission can be facilitated under certain meteorological conditions, and for that reason, a quarantine can have a positive impact on animal health and social outreach.

This solution will not impact the global performance of the farm facing loss or limited access to agricultural land because the assumption is that it is an already implemented solution. Therefore, there is no direct impact for this challenge.

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Cost-Benefit Analysis

Costs

Socioeconomics:

- Investment costs for setting up or adapting the quarantine area (e.g., construction, partitions).
- Purchase of dedicated equipment (thermometers, cleaning tools, disinfectants, barriers, signage).
- Ongoing costs for cleaning, disinfecting, and maintaining quarantine facilities.
- Personnel costs due to increased workload (hygiene, monitoring, documentation).
- Loss of income from empty stalls reserved exclusively for quarantine use.
- Delays in integrating new horses (e.g., for competitions, breeding).
- Increased complexity in stable organization and scheduling.
- Costs for staff training and education on quarantine and biosecurity procedures.
- Costs related to behavioral management (e.g., enrichment materials, exercise programs) to reduce stress during quarantine.
- Potential increased costs from using environmentally friendly but more expensive cleaning and disinfecting agents.
- Costs for developing and updating written protocols and emergency plans.
- Possible costs for monitoring and diagnostic testing during quarantine (e.g., EIA tests, parasitology).
- Investment in mobile quarantine stalls or flexible infrastructure to optimize space use.

Benefits

- Prevention can avoid catastrophic economic and social consequences (financial losses, poor reputation, psychological stress in the event of animal losses).
- Positive social image and image gain for the farm.
- Prevention of high workload in the event of a disease outbreak.
- Insurance function: avoidance of major future costs due to disease outbreak.
- Psychological relief for horse owners and employees through a defined protection concept.
- Long-term strengthening of competitiveness through health management and customer trust.
- Possible funding opportunities or subsidies for biosecurity measures, depending on the region.

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Costs

Health & Welfare:

- Potential welfare impact due to social isolation and reduced movement during quarantine.

Environmental Sustainability :

- Environmental impact and costs associated with the use and disposal of biocides and disinfectants.
- Resource consumption related to building and maintaining quarantine facilities (energy, water, materials).
- Increased frequency of cleaning and disinfection, which can increase water and chemical usage.
- Waste management costs for disposable gloves, overshoes, and other single-use materials used in quarantine areas.

Benefits

- Preventing the spread of highly contagious diseases.
- Protection of the physiological health of horses.
- Early detection and treatment of diseases.
- Quarantine can also serve as an opportunity for early detection of non-infectious health problems (e.g. parasite infestation, allergies).
- Possible sharing of quarantine pens for animals of the same origin to mitigate isolation.
- Note: Balance between stress due to isolation and protection of health necessary e. g. use activity, regular exercise during quarantine to reduce stress.
- Designing quarantine areas with sufficient space and visual contact with conspecifics can reduce stress and promote well-being.

- No direct positive environmental impact, but general recommendations.
- Possibility of using environmentally friendly cleaning agents and disinfectants minimizes environmental risks.
- Planning of quarantine areas can rely on existing infrastructure to conserve resources (e.g. use of existing stables, no additional surface sealing).
- Avoiding outbreaks of disease reduces the use of medication in the long term and thus environmental pollution.

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Cooperation between farms:

- Time and effort needed for communication and coordination between farms regarding quarantine practices and disease reporting.
- Administrative costs and effort involved in coordinating shared quarantine measures with neighboring farms.
- Administrative and legal costs related to formal agreements for shared quarantine facilities.
- Possible expenses for joint management, scheduling, and maintenance of shared quarantine areas.
- Risk management costs to ensure biosecurity standards are consistently met across different operations.
- Challenges and potential costs due to conflicts in quarantine use timing or breaches in protocols that may affect multiple farms.

- Exchange and communication essential in cases of illness.
- Establishing a regional network for disease prevention can create synergies and promote the exchange of information.
- Joint training and awareness programs strengthen awareness of biosecurity at regional level.
- Digital tools (e.g. apps, platforms) can facilitate communication and management of quarantine measures between farms.

Additional Resources

Video

- Explanation about quarantine made by Teagasc in english: https://youtu.be/Ry-qek9XDTE?feature=shared
- French Language: https://www.equiways.fr

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Annex

Ideas to Animate a Workshop About the Solution

- Ask a veterinary pharmaceutical company or biosecurity equipment supplier (e.g. thermometers, disinfectants, PPE) to sponsor the workshop.
- Find a model equine facility that already uses a quarantine area effectively to host the event.
- Prepare a mock quarantine area and let participants practice setting it up, defining workflows, or interpreting clinical signs during a simulation.

Proposed Structure for the Workshop on Quarantine and Clinical Monitoring of New Arrived Horses in Horse Stables:

1. Introduction to Quarantine and Clinical Monitoring
- What is equine quarantine? What is clinical monitoring?
- Key features: Isolation, duration, equipment, dedicated care routines.
- Types: Full isolation boxes, mobile quarantine paddocks, on-farm vs. shared quarantine options.

2. Benefits of Quarantine Measures in Horse Stables
- Disease prevention: Avoid costly and dangerous outbreaks.
- Improved health: Protects physiological health of resident and incoming horses.
- Reduced emergency workload: Prevents sudden spikes in staff burden during disease events.
- Professional image: Demonstrates responsibility to clients and partners.

3. Practical Applications on Horse Farms
- Example quarantine setups for different farm types (e.g. sport horse stable, breeding operation, riding school).
- Use in both individual and group arrivals.
- Integration with existing deworming and vaccination protocols.

4. How to Choose and Design a Quarantine Setup
- Assess your farm's risk level and movement frequency.
- Evaluate infrastructure: Do you need mobile or fixed stalls?
- Define workflows: Entry/exit routes, PPE logistics, hygiene stations.
- Compare layout options, cost-efficiency, flexibility.

5. Hands-On Demonstration
- Live setup of a quarantine area (signage, barriers, workflow).
- Participants take mock temperatures, fill monitoring logs, simulate PPE routines.
- Optional: Live inspection of a newly arrived horse (or demo horse) for clinical signs.

6. Maintenance and Troubleshooting
- keeping quarantine areas clean, safe, and functional over time.
- Disinfection routines and choosing the right products.
- Managing staff adherence to biosecurity rules.

7. Case Studies and Real-World Examples
- Examples from farms with successful quarantine protocols.
- How they adapted over time (e.g. after outbreaks or new arrivals).
- Key lessons: What worked, what failed, what was improved.

8. Cost Analysis and Return on Investment (ROI)
- Comparison: Initial setup cost vs. potential outbreak cost.
- Productivity preserved by preventing large-scale illness.
- Social value and client trust can be significant long-term assets.
- Economic models from farms with and without quarantine protocols.

9. Q&A Session
- Participant questions on feasibility, design, costs, alternatives.
- Open exchange of experiences or doubts.
- Space for discussing adaptations to different farm sizes and resources.

10. Wrap-Up and Resources
- Summary of the key takeaways.
- Distribution of templates: checklists, monitoring sheets, SOP drafts.
- List of suppliers and contact points for PPE, diagnostics, signage.
- Suggestion of further reading and biosecurity guidelines from veterinary authorities.
- Optional: Discount codes from sponsor companies.