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FOOT AND MOUTH DISEASE: THE HIDDEN EPIDEMIC IN ANIMAL KINGDOM

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Foot and Mouth Disease (FMD), often abbreviated as FMD, is a highly contagious viral illness that affects a broad spectrum of cloven-hoofed animals, including cattle, pigs, sheep, and goats. Although less well-known than some of its counterparts, like avian flu or mad cow disease, FMD has the ability to ruin farms, sabotage food supply networks, and affect the lives of countless people. Caused by an aphthovirus belonging to the Picornaviridae family, FMD is known to have seven serotypes: A, O, C, Asia, and SAT (Southern African Territories), each with additional variation among the strains.

The history of Foot and Mouth Disease dates back centuries, with documented outbreaks causing considerable economic and social distress. Its name is derived from the typical symptoms it produces, including blisters and painful sores on the mouth, feet, and occasionally the udders. The impact of FMD, however, goes far beyond mere discomfort, sending shockwaves through farming communities and inciting fear in agronomists, veterinarians, and policymakers. Morbidity in a vulnerable population can reach 100%, with rare fatalities occurring only in young animals. While FMD is present everywhere, it has been completely eradicated in some areas, such as North America and Europe. Without stringent measures, FMD can be easily reintroduced into disease-free areas, posing a financial burden on the international livestock trade in endemic countries.

Symptoms of FMD

Numerous clinical symptoms, varying in intensity, are indicative of the illness. Although FMD usually does not result in death for adult animals, it can have serious consequences for both animal welfare and the economy. Clinical signs include fever, vesicles (fluid-filled blisters) in the mouth, interdigital spaces, teats, and coronary bands, excessive salivation, lameness, reduced feed intake, weight loss, and drooling. Decreased milk

production may occur in dairy cattle. Secondary bacterial infections are also common due to open sores, and even after recovery, animals can harbor the virus, causing new outbreaks.

Transmission and Spread of FMD

Animals can become infected through inhalation of virus particles in the air or ingestion of virus particles. All of the excretions and secretions from infected animals contain FMD. Transmission can occur through saliva, milk, semen, contaminated pens, buildings, vehicles, materials, clothes, shoes, equipment, aerosols, and even through feeding raw or improperly cooked meat or animal products. Even after recovery, animals can harbor the virus, causing new outbreaks.

Significances: How Important is FMD?

Foot-and-Mouth Disease (FMD) is a highly contagious viral disease with significant implications for both the livestock industry and international trade.

- It poses economic impacts, jeopardizes food security, risks livelihoods, compromises animal welfare, and disrupts global trade.
- Trade restrictions imposed during outbreaks can result in substantial financial losses for ranchers, farmers, and countries overall.
- Food shortages and price increases may arise from the disease's potential to force the culling of diseased animals, impacting the accessibility and cost of necessary protein sources for human nutrition.
- Livestock farming, a major income source for many, particularly in rural areas, is at risk due to lowered animal productivity and market value.
- The suffering experienced by animals further underscores the significance of treating FMD. Since FMD is a transboundary illness, it can easily move across national boundaries, prompting nations to impose trade restrictions and quarantine measures.

These measures impact not only the livestock industry but also the stability of the world economy.

Prevention and Control Measures

The implementation of the FMD control strategy varies, but good biosecurity procedures are crucial.

- At the farm level, measures include restricting public access, managing the addition of new animals, routine cleaning and disinfecting, illness monitoring and reporting, and proper disposal of manure and dead cattle.
- Contingency planning for outbreaks involves eliminating contact animals, proper carcass and animal product disposal, monitoring and tracking infected or exposed livestock, enforcing quarantine regulations, and thorough disinfection.

Use of Vaccination

Depending on the FMD situation, vaccination campaigns must cover 80% or more of the target population quickly. Timing should account for maternal immunity, and vaccines must be safe, effective, and antigenically match the field strains according to WOA standards. While vaccination may be part of a successful control strategy, national authorities decide whether to employ it.

Conclusion

Foot and Mouth Disease poses multifaceted challenges, requiring a comprehensive approach to mitigate its impact. Addressing economic, food security, livelihood, and animal welfare concerns, while implementing stringent prevention and control measures, is crucial for a global response to this significant threat.

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