

Investigating the origin of the 2023 Equine Arteritis Virus outbreak

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Equine Viral Arteritis (EVA) is a disease caused by the equine arteritis virus (EAV). EVA is characterized by neonatal deaths, abortions within broodmares, and decreased fertility in stallions. Stallions can act as a carrier for the virus and shed it in semen, allowing EAV to be spread through both respiratory and venereal routes. It is considered endemic within the Standardbred breed, however the breeding industry on Prince Edward Island (PEI) maintained a relatively closed population which resulted in suspected naivety to the virus. In 2023 the presence of EAV was first detected on PEI through the sudden death of a foal in March which was rapidly followed by other deaths. Historically, EAV is introduced to a population through a new carrier stallion being brought to the impacted region and so it is hypothesized that the virus was brought to PEI through a newly imported carrier stallion who shed the virus to other horses throughout the breeding season. The aim of this study was to determine the origin of the outbreak which swept through the Standardbred population and caused both loss of life and great financial loss. Over the course of 2023-2024, semen samples were collected and tested for the presence of EAV using RT-PCR. Stallions who tested positive had their movement history inspected using Track-IT, a Standardbred Canada database which records the history and location of individuals. Once the most likely stallion was identified, breeding histories and on-farm interviews were used to trace the steps of the outbreak from its origin to each of the 2023 neonatal foal deaths. The data provided from this study highlights how ineffective biosecurity allowed the virus to propagate, and how such loss could be avoided in the future through vaccinations and stronger farm management.

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