Early Detection of Viral Infections Improves Biosecurity in Animal Agriculture.

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Viral diseases cause substantial morbidity and mortality in animal production systems. In addition, several high profile viruses have caused economic devastation to regional animal production systems in recent years. Furthermore, the list of OIE reportable diseases is dominated by virus-caused diseases. A number of viral diseases are also zoonotic, creating concern about disease transmission to humans. Animal movement within and between States and Nations typically requires a Certificate of Veterinary Inspection which certifies the "general healthy appearance" of the animal. In addition, some locales require specific testing for regional or national diseases of concern. Of course, the general veterinary recommendation is to quarantine new arrivals so diseases in the early stages of infection can be detected before animals are mixed in with the herd/flock. Because of the large number of potential viral agents and the fact the many diagnostic tests provide only retrospective information (presence of Antibodies) regarding infection status, there is a significant unmet need for a broadly sensitive, rapid diagnostic to detect viral infections in asymptomatic animals. The presentation will provide background on a recently patented (US) technology for the early detection of viral infections in asymptomatic animals. Availability of a broadly sensitive viral diagnostic will facilitate the rapid diagnosis of virus-caused diseases, reduce their spread, and may help reduce the unnecessary use of antibiotics in animal agriculture. Finally, such a diagnostic may provide a critical first line of defense in emerging, or bioterrorist engineered virus disease detection and control.