EVALUATION OF THE EFFICACY OF WEST NILE VIRUS VACCINATION IN THE GREATER ONE-HORNED RHINOCEROS (*Rhinoceros unicornis*)

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Abstract

Given the broad range of species that have seroconverted or been affected by the disease caused by West Nile virus (WNV), rhinoceros are presumed to be susceptible to the virus.[1,2] A 2004 North American zoo-wide census conducted for the annual greater one-horned rhinoceros (*Rhinoceros unicornis*) SSP Veterinary Advisor report revealed that 10 out of 21 institutions vaccinate their greater one-horned rhinoceros collection for WNV using the equine protocol for the killed vaccine (Innovator®, Fort Dodge Animal Health, Fort Dodge, Iowa, 50501 USA). Pre- and post-vaccine antibody titers were not measured in any of these animals. The objective of this study was to assess the serologic response of the greater one-horned rhinoceros to the killed equine WNV vaccine. Five immunologically naïve greater one-horned rhinoceros at three institutions in the United States were vaccinated using the commercial equine killed vaccine according to manufacturer's recommendations. All animals were evaluated for an immune response based on comparisons of their pre- and post-vaccination antibody titers, serum protein electrophoresis, complete blood cell count, and serum biochemistry profile. Seroconversion did not occur in any of these animals following WNV vaccination, nor were there consistent changes in other hematologic parameters to support a detectable immune response. Possible factors in the lack of immune response may include ineffectiveness of the killed product, inadequate dosage and/or frequency of administration. Further investigation is warranted to evaluate whether changes in product type or administration might incite a humoral response in these animals.

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