

Vesicular Stomatitis Infection Found in Sand Flies

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Since 1980, SCWDS and Veterinary Services, APHIS, USDA, have been monitoring vesicular stomatitis (VS) on Ossabaw Island, Georgia, to determine the reservoir(s) and vector(s) of this elusive viral disease. Surveillance with sentinel wild swine has shown that VS virus is enzootic on Ossabaw and that virus activity starts each year in late April and early May. The incidence of infection varies from year to year, and there appear to be local hot spots of virus activity that are probably associated with microhabitats. Epidemiologic studies with sentinel domestic pigs held in special pens on the island have provided strong evidence that VS virus is transmitted by flying insects.

Twice this summer, VS virus (New Jersey serotype) was isolated from vesicles on wild swine. On the 3rd of June, 23 days prior to the first VS virus isolation from wild swine, sand flies (*utzomyia hannoni*) were collected that contained VS virus. Collections were made throughout the summer, and 4 additional pools of flies were positive for virus. These are the first isolations of VS virus from sand flies at an enzootic site in the U.S., and they represent a major development in the search for a potential reservoir and/or vector.

Studies are now in progress to determine the specific role of the sand fly in the cycling of the VS virus. Live sand flies were collected from Ossabaw Island by SCWDS and later moved to Yale University's Arbovirus Research Unit to establish a colony. Researchers from Yale and SCWDS will evaluate whether VS virus replicates in sand flies and whether it can be transmitted transovarially. Additional studies are in progress on Ossabaw to determine specific habitats used by the sand flies for resting and breeding in order to evaluate any association between the distribution of the sand flies and the hot spots of VS virus on Ossabaw.

Unraveling the mysteries of VS virus will benefit livestock interests throughout the U.S. Vesicular stomatitis is an important disease because of the direct impact that widespread epizootics have on the livestock industry and because this disease is clinically indistinguishable from foot-and-mouth disease. A better understanding of the epizootiology of the virus will lead to more effective methods of controlling outbreaks and will ease the burden on regulatory agencies.