Title: Evaluation of the Role of Mosquitoes as Biological Vectors of PRRSV - NPB #02-091

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Abstract: The objectives of the study were to determine whether mosquitoes, Aedes vexans (Meigen), could serve as biological vectors of porcine reproductive and respiratory syndrome virus (PRRSV). Specifically, the study assessed the duration of viability and the site of PRRSV within mosquitoes, and evaluated whether PRRSV could be transmitted to a susceptible pig by mosquitoes following a 7 to 14-day incubation period after feeding on an infected pig. For the first experiment, a total of 100 mosquitoes were allowed to feed on an experimentally PRRSV-infected pig (day 7 post-inoculation) and maintained alive under laboratory conditions. A set of 10 mosquitoes were collected at 0 hour (h), 6 h, 12 h, 24 h, 48 h, 72 h, 5 days (d), 7 d, 10 d, and 14 d post-feeding (pf). Samples of exterior surface washes, salivary glands, thorax carcasses, and gut homogenates were collected from each set of mosquitoes, and tested for PRRSV. Infectious PRRSV was detected by polymerase chain reaction (PCR) and swine bioassay only from the gut homogenates of mosquitoes collected at 0 h and 6 h pf. For the second experiment, a total of 30 mosquitoes were allowed to feed on an experimentally PRRSV-infected pig and the mosquitoes then maintained under laboratory conditions. On each of day 7, 10, and 14 pf, a set of 10 mosquitoes were allowed to feed on a susceptible pig. Transmission of PRRSV to susceptible pigs did not occur, and PRRSV was not detected from the mosquitoes. These findings indicate that mosquitoes (Aedes vexans) are not likely to serve as biological vectors of PRRSV.