Case Definition

Slow Bee Paralysis Virus

(Species: *Iflavirus apistardum;* Genus: *Iflavirus;* Family: *Iflaviridae***)**
(Monitored)

December 2023

1. **Disease Information**
   - **1.1 General Disease and Pathogen Information:** The Slow Bee Paralysis Virus (SBPV) was initially discovered in England in 1974 as a disease-causing agent affecting the European honey bee (*Apis mellifera*). It was also reported to cause infections in bumblebees (*Bombus spp*.) and silkworms (*Bombyx mori*). The virus has a relatively low occurrence in many regions of Europe and, to date, has not been identified within the United States. The parasitic mite (*Varroa destructor*) transmits SBPV directly to adults and pupae when it feeds on the honey bees. The association of SBPV infection with the *Varroa* mite, which is an effective vector of a number of viruses, has devastating effects on bee health.
   - **1.2 Clinical Signs:** SBPV induces the paralysis of the front two pairs of legs about 10 days after injection of the virus into the abdomen of adult bees. The replication of the virus is primarily accumulated in the head, the hypopharyngeal, mandibular and salivary glands, the fat body, crop, and forelegs suggesting that the virus may also be spread through the oral route of the transmission. SBPV usually persists as a covert infection without clinical signs. However, the chronic infection can be switched into an acute overt infection in bee colonies that are infested with *Varroa* mites via *Varroa*-induced virus activation and host immunosuppression.
2. **Laboratory Criteria**
   - **2.1 Agent Isolation and Identification:** SBPV infected colonies normally do not exhibit clinical signs. While the enzyme-linked immunosorbent assay (ELISA) test is available for laboratory diagnosis, SBPV diagnosis is generally accomplished through direct detection of viral nucleic acid called RNA by Reverse Transcription-Polymerase Chain reaction (RT-PCR) assay in honey bee adults and brood.
   - **2.2 Agent Characterization:** There are two SBPV strains derived from an English SBPV isolate and labeled as “Rothamsted” and “Harpenden”. Both stains share similar biological and genomic features that fulfills the inclusion criteria of the virus family, *Iflviridae*.
   - **2.3 Serology:** NA
3. **Case Classification**
   - **3.1 Suspect Case:** honey bees with compatible clinical signs.
   - **3.2 Confirmed Positive Case:** a suspect case with a positive ELISA or RT-PCR test.
4. **Reporting Criteria[1]:** SBPV is a U.S. monitored disease that is reportable monthly under the APHIS National List of Reportable Animal Diseases (NLRAD).

[1] Not a WOAH listed disease.