

Thai Sac Brood Virus Situation in Thailand

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Thai Sac Brood Virus Disease (TSBVD) was first found in *Apis cerana* collected from Doi Pui, Chiang Mai province, Thailand, in 1976 (Areekul et al., 1979). It was confined to *A. cerana* colonies although there were a few *A. mellifera* colonies in the same apiary. TSBV was isolated from *A. cerana* larvae from Thailand and characterised to be different from sac brood viruses affecting *A. mellifera* by Bailey et al. (1982). The present situation in Thailand is reported here based on information from the Entomology and Zoology Division, Department of Agriculture, Bangkok, Thailand and observations of apiaries in central Thailand.

Morphological and Pathological Studies of TSBV

Attathom (1984) reported that TSBV is a spherical virus with diameter of 29 ± 1 nm. It is found to infect cytoplasm of fat cells of honeybee larvae. Electronmicroscopic observations of infected cells indicate that viral synthesis take place in electron dense areas randomly located in the cytoplasm. Newly synthesised virus particles are found to surround specific areas forming inclusions where subsequently virus multiplication occurs. Virus particles themselves demarcate the

inclusion from the rest of the cytoplasm. The arrangement of virus particles are classified into five categories: short banded body row-to-row arrangement; long curved lines of virus particles arranged predominately in two rows; irregular arrangement of packed virus particles; crystalline lattice arrangement of packed virus particles; and, particles distributed singly at random.

Situation of TSBVD in Thailand

In 1976, TSBVD was found among colonies of *A. cerana* in mountainous areas of northern Thailand. There was no report of disease in the south of Thailand at that time. In 1990, there was an outbreak of TSBVD in Chumporn province in the south of Thailand (Jarungjit et al., 1990). Beekeepers lost about 90 per cent of their colonies. Examinations confirmed symptoms of TSBVD in Nakornsri Thammarat province but no colony loss occurred. It was noticed that the outbreak occurred after Typhoon Kay had caused severe flooding and destroyed most fruit plantations in Chumporn. This outbreak of TSBVD might have been caused by changes in the ecological system and colonies being weak from lack of food (pollen and nectar). At present, there is no report of the TSBVD in Thailand. A

few colonies that have been infected by European Foul Brood are suspected of having 1-2 larvae infected by TSBV.

Treatment

There is no effective chemotherapeutic agent in preventing or controlling TSBVD. The virus does not survive long and the disease may disappear during honey-flow period. Since the disease usually occurs when the colony is in a stress situation good management and sanitation are the best ways for preventing it. In mild cases, management measures to restore colony strength are needed such as providing food, adding to the worker population, pulling out infected larvae and destroying them, caging the queen for 5-10 days, moving bees to a new apiary area and reducing humidity in the hive. In severe cases, infected combs and bees should be destroyed by burning them or the colony requeened.

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