

# VERMONT AGENCY OF AGRICULTURE

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PLANT INDUSTRY DIVISION

## *CHALKBROOD DISEASE*

Cause: Ascosphaera apis, a fungus.

Effect: Chalkbrood disease affects only the brood. The diseased larvae are usually found on the outer edges of the brood nest. Workers, drones, and queens are all susceptible to the disease.

Symptoms: The affected larvae are usually (but not always) found on the outer fringes of the brood area. Brood cells can be sealed or unsealed. Diseased larvae are stretched out in their cells in an upright position. Typically, larvae dead from chalkbrood disease are chalk-like white color, hence the name "chalkbrood". Sometimes the diseased larvae can be mottled with brown or black spots, especially on the ventral sides. The color variation is from the brown to black color of the fruiting bodies (spore cysts). Chalkbrood mummies once dry, are loose in the cell, and can be removed easily. Often, a few of these mummies are visible on the ground at the entrance to the hive.

Transmission: The spores of Ascosphaera apis are ingested with the brood food as the larva feeds itself. The germination of the spores and proliferation of the fungus, breaks out of the larva and covers it with a white mycelium.

Spores of Ascosphaera apis remain viable for years. Consequently, the infection source could be present in the cells used to rear brood. Chalkbrood appears to be most prevalent in the spring when the brood area is expanding, and the weather is cool and unsettled. Generally, the disease is found in those areas of the brood nest where sufficient nurse bees are unavailable to maintain the brood nest temperature.

Chalkbrood normally does not destroy a colony. However, it can prevent normal population build-up when the disease is serious. No treatment is presently available for the control of chalkbrood. In severe cases, re-queening is helpful, as well as the addition of sealed brood to the weakened colony. The disease usually disappears or is reduced as the air temperature increases in the summer, and pollen and nectar flows begin.

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