

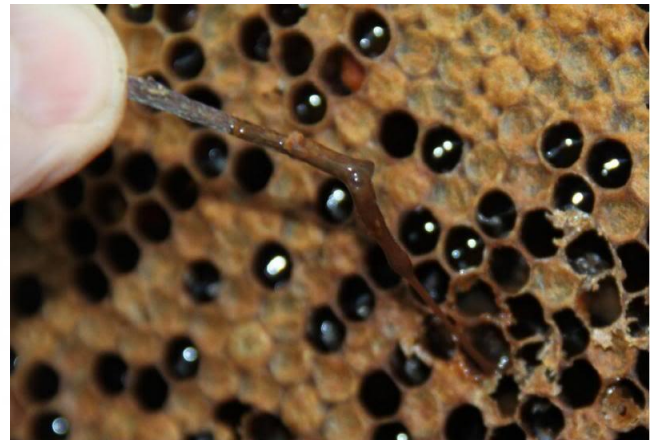
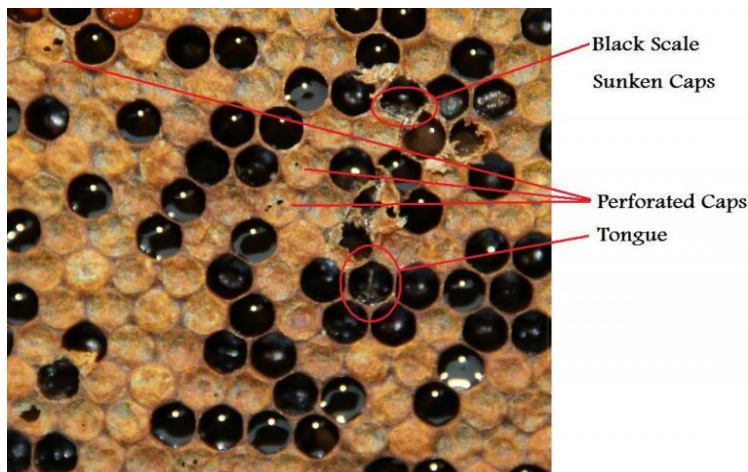
AMERICAN FOULBROOD (AFB)

Description

American Foulbrood (AFB), *Paenibacillus larvae*, is an infectious and contagious bacterial disease of honey bee larvae. AFB is introduced and spread by spores carried on drifting bees from nearby colonies, infected comb, used equipment, tools, beekeepers, and robbing. The infection is initiated when spores enter the colony and then nurse bees feed contaminated spores to developing larvae. Note that spores are only infectious to larvae and do not present symptoms in adult bees. The spores then migrate to the midgut, germinate and become vegetative allowing the bacteria to consume the larvae causing death. Typically, larval death occurs after the cells are sealed. The dark colored AFB scale that results from dead, dried larvae is very hard for workers to remove allowing colonies to be continually infected if using contaminated equipment. AFB scales contain millions of spores allowing ease of transmission within and between colonies. Given this, AFB is highly contagious and can spread rapidly becoming lethal for infected colonies, as such is considered a major threat to apiculture.

Signs and Symptoms

- May see colony worker population decline
- May have an agitated and/or aggressive colony
- Foul, rotting smell (compared to rotting meat or sulfurous chicken house)
- Uneven and/or spotty brood pattern on frame(s)
- Perforated, greasy and/or darkened sealed brood cell capping(s)
- Sunken sealed brood cell capping(s)
- Moisture on top of sealed brood capping(s)
- Coffee brown colored larvae located at the bottom of the cell
- Roping, sticky larval remains at least 2cm in length when drawn out of cell
- Coffee brown to black colored larvae hardened into dark "scales", located at the bottom of cells that are difficult to remove and may fluorescence when shined upon using UV light source
- Coffee brown colored dead pupae with protruding tongue



Think You May Have AFB?

Contact the MDAR Chief Apiary Inspector immediately if you suspect your colony is contaminated with AFB: kim.skyrm@state.ma.us; 413-548-1905(office) or 857-319-1020(cell). AFB infected colonies should not be treated and must be destroyed pursuant to [M.G.L. c. 128](#), Sections 33-34, [330 CMR 8.02-8.03](#).

References

1. Pernal, S.F. and Clay, H. (eds). 2013. Honey bee diseases and pests, 3rd edition. Canadian Association of Professional Apiculturists (CAPA). Beaverlodge, AB, Canada. 68pp.
2. Sallman, B and Synder, R. 2014. Diagnosis and Treatment of Common Honey Bee Diseases. Bee Informed Partnership, Inc. 21pp.
3. Vidal-Naquet, N. 2015. Honeybee Veterinary Medicine: Apis mellifera L., 1st edition. 5m Publishing, United Kingdom. 260pp.