



Amoeba

(This is not a notifiable disease)

Amoeba (*Malpighamoeba mellificae*) is a protozoan amoeba-like parasite found in the gut of adult bees that causes encysts in the malpighian tubules (Malpighian tubules are excretory organs, long, threadlike projections originating at the junction of the midgut and the hindgut). Massive lethal invasions of bees are not frequent and the anatomical protective barriers of the gut limit the destructive action of the parasite.

Note: No medical treatments are available for Amoeba, good apiary hygiene is the key to maintaining healthy colonies.

Recognition:

Sorry, no images

The cysts found in the malpighian tubules can only be detected using a compound microscope. Symptoms are similar to Nosema, crawling bees unable to fly, signs of Dysentery, more common in spring.

The symptoms are similar to the Nosema, colony collapse, crawling bees outside the hive unable to fly, diarrhoea - watery faeces of yellowish coloration. Like Nosemosis, Amoebiasis is more common in spring. There is no known medical treatment against Amoebiasis.

Life Cycle

The life of the cysts in the honeycombs is 6 months in faeces.

Vectors

Amoeba can exist in beekeeping equipment, honey, wax, etc. and can spread during normal hive / colony manipulations.

- Beekeepers - Transferring contaminated equipment / material between hives, colonies and apiary sites.
- Crushed Bees - Bees will clean up any crushed bees during normal house keeping activities and can pick up and spread disease quickly through the colony.
- Robbing - Colonies weakened by other ailments will fall prey to robbing, transferring disease to other colonies and apiaries.
- Drifting - As with Robbing will transfer disease to other colonies.
- Swarming - Swarms can carry the spores with them to new sites where the disease can spread.

Note: poor beekeeping hygiene contributes greatly to the spread of Amoebiasis.

Effects on *Apis mellifera* colonies

As with Nosema, colonies badly infected with Amoebiasis may die out in spring.



How to Manage Amoeba

Amoeba (*Malpighamoeba mellificae*) is a protozoan amoeba-like parasite found in the gut of adult bees that causes encysts in the malpighian tubules. The degree of infection can vary and colonies that are already weakened by other circumstances may suffer to a greater extent and especially in early spring.

Detection

Hive Examination - Examination of hives, components and debris is required especially in spring. Abnormalities such as the signs of Dysentery, crawling and dead bees are easily spotted.

Monitoring

Vigilance is important with all honeybee diseases. Check all apiaries and colonies regularly for health especially in autumn and spring, and suspect any colonies that are not thriving where there is no already known reason. Colonies that die out should be examined thoroughly and sealed to prevent robbing and spread of any disease present.

Controls

Disinfection with acetic acid of the honeycombs destroys the cysts of Amebiasis and the spores of Nosemosis. The disease has only slight effect on healthy colonies but may have a more serious effect on weakened colonies. Prevention is the best method of controlling this disease by maintaining healthy, strong and vigorous colonies that display good hygienic traits. Good husbandry contributes greatly to overall colony behaviour and health, thereby avoiding the conditions in which disease can flourish. Colonies that suffer excessively from Amoebiasis may need to be re-queened.

Note: Presently there is no effective medical treatments for Amoebiasis

Apiary Housekeeping:

- Always maintain a high level of hygiene in all your beekeeping practices
- Carry out methodical health inspections on a regular basis, checking for brood disease particularly in spring and autumn.
- Never transfer combs between colonies without checking for brood diseases
- Systematically replace old brood combs in your hives melting down the old comb to maintain clean and healthy brood.
- Never bring colonies or equipment into your apiary without establishing their origin, condition, and disease status.
- Sterilise any secondhand equipment or hive components before introducing them into your apiary.
- Discourage drifting and robbing in the apiary.
- Suspect stray swarm health until you know otherwise.
- Report any incidence of disease or suspicious conditions immediately to your local Beekeeping Association