



IOWA BEEKEEPING INFORMATION
Iowa Dept of Agriculture & Land Stewardship
Office of the State Apiarist
Iowa Laboratory Facility
2230 South Ankeny Blvd.
Ankeny, IA 50023

Detection & Control of Brood Diseases

Healthy brood

Pearly white larvae and convex (puffy) cappings on sealed brood

Bacterial diseases - foulbrood; smelly,

American Foulbrood Disease (AFB): light to dark brown, dead larvae in a cell with a perforated capping. Consistency of dead larva is gooey or "ropy". Atypical symptoms may be related to antibiotic treatments that work partially.

European Foulbrood Disease (EFB): yellowish, twisted dead larva in an uncapped brood cell.

Fungal diseases - chalkbrood and stonebrood diseases; dead larvae dry and hard; shape and size similar to a shelled, sunflower seed; not usually serious but individual colonies or even whole apiaries appear to be damaged by the chalkbrood disease occasionally. No treatment available.

Viral diseases - sacbrood; larval skin is intact, but insides breakdown to watery consistency; seldom serious although individual colonies may suffer damage. No treatment available.

Parasitic Mite Syndrome - looks like a combination of the above symptoms, sometimes difficult to distinguish from above diseases but the foul odor is missing. Seems to be related to mite infestations and is possibly caused by viruses.

--Treat for mites and the condition seems to clear up when mite populations are reduced.

Controlling Foulbrood Diseases (AFB & EFB)

If AFB is detected the disease **must** be cleaned up in a timely manner so that the disease does not spread to neighboring colonies in the same apiary or nearby apiaries (within 2 miles).

Terramycin – Antibiotic available in different concentrations to be mixed with powdered sugar, salt, extender patty, in sugar syrup for EFB, Tetra B mix or other commercial formulation. Terramycin is to be used only as a **preventative** treatment.

Tylosin or “Tylan” – Alternative antibiotic to Terramycin. More research is necessary before a strong recommendation can be made. Tylan could become important as AFB strains develop resistance to TM. Tylosin is to be used as a **preventative** treatment only.

Fire -- Destruction of equipment (woodenware, frames, combs...) by fire is still the **only** way to be confident the infection has been eliminated.

Disinfecting equipment –In some cases, woodenware (not combs) may be salvaged by scorching, lye water (one can of lye in 15 gallons of water and boil for 20 minutes), ETO fumigation, formaldehyde, hot paraffin dip or irradiation.

Terramycin-Tolerant American Foulbrood Bacteria

- Must be treated as a new disease for which we have no drug cure.
- Therefore, destruction of all diseased material is mandatory.**
- Samples of AFB may be sent to the Beltsville Bee Research Laboratory for testing for tolerance to Terramycin.
- Usually discovered because AFB persists after several treatments of Terramycin. Antibiotic extender patties may not work at all with this disease because the colonies may be getting under-dosed. Some colonies do not consume the whole patty or eat the patty so slowly that they do not get the full dosage of antibiotic.

If you have any questions about disease symptoms or how to treat for diseases please contact the State Apiarist’s office.

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