



## Factsheet #202

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### EUROPEAN FOULBROOD

European Foulbrood (EFB) affects bee brood and is caused by the bacterium *Mellisococcus pluton*. The disease has been reported worldwide and is normally not considered serious. EFB mostly occurs in spring when the colony is under stress due to poor management, lack of forage, high colony density, etc. EFB often occurs during the dearth period in late spring when there is a sudden but temporary decline of forage availability.

Young honey bee larvae become infected with *M. pluton* when they are fed contaminated food by nursing bees. The bacteria multiply rapidly in the mid-gut of the young larva, resulting in starvation just prior to capping. Some larvae may survive and enter the pre-pupal stage but die shortly thereafter. The bacteria can remain viable for several years after the larva has died.

#### Symptoms

When the larva dies, it is in a **coiled or twisted position** and will turn yellow to brown. About 10% of the larvae die after capping and this often leads to **misdiagnosis** because of visual similarity to American Foulbrood (AFB).

The odor of the infected brood is **sour**. Unlike AFB, EFB-infected larvae don't become **ropy** when it is collected from a brood cell. Over time, the decaying brood will dry up and form a soft scale, not hard like AFB. The scale is easily removed from the cell.

When in doubt, collect samples from several cells with a toothpick and place in a small plastic bag or plastic wrap. Place the sample in an envelope and mail to the Apiculture office in Abbotsford for identification.

#### Management and Control

At the start of the main nectar flow, EFB mostly disappears or becomes non-detectable. The infestation may reappear in the fall. Re-queening seems to help because certain bee lines appear less susceptible than others, and the replacement of the queen involves a break in the brood cycle of the colony.

Remedial action is dependent on the severity of the EFB infestation. When EFB only affects a few brood cells, no antibiotic treatment or brood frame removal is required. When the EFB infestation involves brood cells on several frames, the affected frames need to be removed and destroyed through burning. Replace with foundation frames. When the EFB infestation is visually evident throughout the brood nest, the colony may need to be transferred onto clean or new equipment. The old frames should be removed and discarded for landfill or destroyed through burning. The colony placed on the new equipment should be given an antibiotic treatment. (refer to Factsheet #204 for dosage and handling) .

#### Prevention

- Inspect brood frames regularly and be familiar with symptoms.
- Inspect frames before transferring bees or combs between colonies.
- Keep apiary clean and remove unused and old equipment.
- Establish hospital yards for colonies from different apiaries that have EFB. Clean hive tools, smoker and gloves after inspection of each apiary. Clean clothes regularly.
- Replace the queen every 1 – 2 years. Because some queen lines are more susceptible to EFB than others, purchase queens from different breeders.
- Only feed clean pollen and honey to colonies.

