

Complete Beekeeping Short Course

Part 16:

Honey Bees Diseases



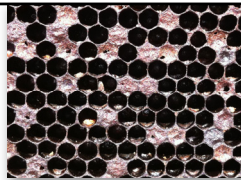
honey bee diseases

- what does a healthy colony look like?



honey bee diseases

- ~~Does this look healthy?~~
- *Paenibacillus larvae*
- caused by a bacterial spore
- highly resistant – difficult to kill
- can remain on combs & woodenware
- bee larva ingest spores in contaminated food
- larva dies soon after cell is capped
- extremely lethal and contagious!!!
- only dangerous to honey bees
- spores are found in lots of store-bought honeys



honey bee diseases

- American foulbrood
- detection
- sunken, perforated caps
- pupal “tongues”
- sulphurous decay odor
- ropiness test
- dead larvae form a tough scale, which is difficult to remove
- dying colonies robbed out by other bees



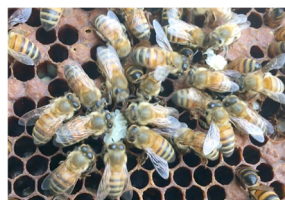
honey bee diseases

- American foulbrood
- treatment



honey bee diseases

- American foulbrood
- treatment
- hygienic genetics



antibiotics do not cure AFB!

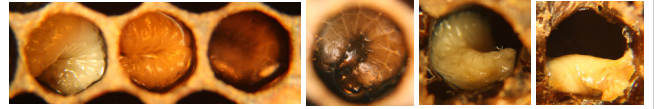
honey bee diseases

- European foulbrood
- *Melissococcus plutonius*
 - larva consumes spores in contaminated food
 - larva dies *before* its cell is capped
 - bacteria does *not* form long lived spores
 - a colony *can* recover from mild infection



honey bee diseases

- European foulbrood
 - detection
 - spotty brood pattern
 - discolored, melting larvae
 - larvae die before capping
 - light-colored, rubbery scale
 - no ropiness



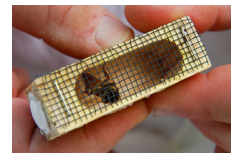
honey bee diseases

- European foulbrood
 - antibiotic treatment
 - cage or replace the queen bee
 - feed antibiotic mixed with powdered sugar
 - release queen in 2 weeks



honey bee diseases

- European foulbrood
 - treatment without antibiotics *usually* works
 - cage or remove the queen bee
 - shake all adult bees onto new foundation
 - discard old combs
 - feed heavily with 1:1 sugar syrup
 - release queen in 2 weeks



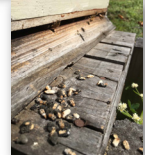
honey bee diseases

- Chalkbrood
- *Ascosphaera apis*
 - fungal infection
 - contact or ingestion
 - when the larva dies, fungus invades entire host
 - forms sporulating bodies
 - larva becomes a "chalky" mummy



honey bee diseases

- Chalkbrood
- detection



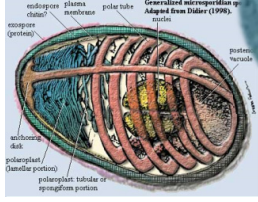
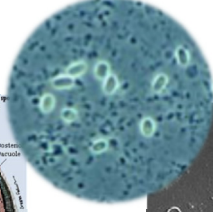

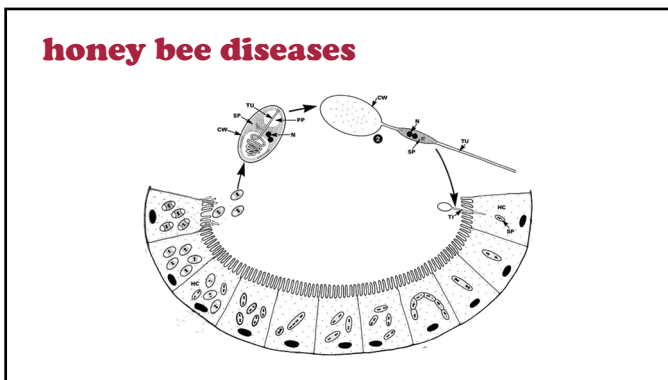
honey bee diseases

- Chalkbrood
- treatment
 - elevate hives
 - ventilate hives

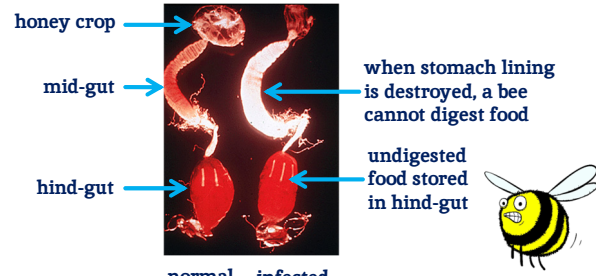




honey bee diseases

- Nosema
 - *N. apis*
 - *N. ceranae*

honey bee diseases

honey bee diseases

Nosema detection








honey bee diseases

Nosema treatment

- mix into syrup
- feed to colony in fall
 - bees consume during winter months
 - less effective against *N. ceranae* in winter
 - can be used as early spring treatment
- don't use during the honey flow!
 - bees must consume all syrup 4 weeks before honey flow
- diet & exercise!



honey bee diseases

- **Viruses**
 - **Sacbrood Virus**
 - replace the queen
 - **Deformed Wing Virus**
 - **Black Queen Cell Virus**
 - **many others**
 - more than 25
 - no medical cure
 - most often spread by parasitic mites
 - hygienic stocks can help

