

Review

- **Pest and Disease Treatments**
- **Varroa Mites: (Varroa Destructor)**
- Signs:
 - Infested capped drone brood
 - Disfigured adult bees, deformed legs or wings
 - Bees discarding larvae and pupae
 - Pale or dark reddish brown spots on otherwise white pupae
 - Visible on the outside of the bee
 - Spotty brood pattern
- **Treatments:**
 - Apiguard: thymol (oil of thyme)
 - Api-Life-Var: thymol + menthol + eucalyptol + camphor
 - Mite Away Quick Strips: formic acid
 - Hopguard (Potassium salt of Hop Beta Acids)
 - Apivar (Amitraz plus inert ingredients)
- **European Foulbrood:**
- Signs:
 - Larvae die in irregular twisted positions
 - Larvae color may change from light to cream to grayish brown, darkening as the dead larvae dry up
 - Sour odor may be present
 - Dead larvae are not ropy as in American Foulbrood
- **Treatment:**
- Terramycin

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- **American Foulbrood:**

- Signs:
- Brood pattern is irregular rather than compact
- Healthy larvae are glistening white; diseased ones turn from light brown to dark brown and are upright, not twisted in cells
- Larvae long dead develop the consistency of glue and are difficult for bees to remove
- Cappings become concave and some will be punctured by bees attempting to remove the dead brood
- Surface of cappings will be moist or wet rather than dry
- Some dead pupae, shrunken into scales have their tongues protruding at right angle to their scale or straight up. This may be the only recognizable characteristic
- **Treatment:**
- Terramycin

- **Chalkbrood:**

- Signs:
- Mummified bodies of brood can often be seen in cells, on bottom boards or at hive entrance
- Very rare
- **Treatment:**
- No chemical treatments available

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- **Nosema: (Nosema Apis)**

- Signs:
- Virtually replaced by Nosema (Ceranae)
- Flying is impaired
- Trembling & quivering, colony is restless
- Feces on combs, bottom boards and outside walls of hive
- Crawling aimlessly on bottom boards, paralyzation of their legs
- Wings positioned awkwardly (K-Wing)
- Swollen abdomen
- When dissected, mid-gut is swollen, dull grayish white and circular construction of gut are not apparent
- **Treatment:**
- Maintain a strong hive
- Fumagilin-B is no longer recommended as a treatment

- **Nosema: (Ceranae)**

- Signs:
- Is a microscopic fungus that suppresses a bees immune system
- There are relatively no visible symptoms
- A seemingly healthy hive can die out in a about 8 days
- Infected forager bees go out but are too weak to return thus leaving the hive weaker until it fails
- Diagnosis involves crushing @50 bee abdomens, preparing a slide of the crushed bees, and viewing them under a microscope. Counting the Nosema cells will give you a final diagnosis
- **Treatment:**
- Maintain a strong hive
- Fumagilin-B is no longer recommended as a treatment

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- **Tracheal Mite:**
- Signs:
- Very hard to detect without dissection. If you notice bees disappearing from your hive you may want a State Inspector to test your bees for this mite
- **Treatments:**
- Menthol
- 50/50 mix of Menthol & Vegetable Shorting grease patties

- **Wax Moths: (Galleria Mellonella)**
- Signs:
- Tunnels in combs
- Silk Trails, crisscrossing one another over combs
- Small dark objects (excrement of wax moth larvae) in the silk trails in a hive
- Silk cocoons attached to wooden parts
- Destroyed comb, piles of debris on bottom board
- Strong hive usually controls moths without assistance
- Treatment:
- Para dichlorobenzene
- Freezing frames 24 hrs kills eggs
- Place hives in full sun to help deter wax moths

- **Small Hive Beetle: (Aethina Tumida)**
- Signs:
- White egg masses deposited by the adult female into crevices within the hive
- Larvae tunnel through combs, killing brood and ruining newly drawn comb
- Cream-colored Larvae feed on pollen and honey for 10-16 days before exiting the hive to pupate in the soil around the hive
- Winged adults emerge from the soil in 2-3 weeks, reenter the hive to feed and reproduce
- Lifespan up to 6 months
- **Treatment:**
- Checkmite+ Strips
- Place hives in full sun to help deter wax moths

Honeybee Maladies Quick Reference

Problem	Symptoms	Treatment
<u>Brood Diseases</u>		
Bacteria - Spores		
American Foulbrood Only Spore stage is infectious During brood season	Affects Brood less than 53 hrs old, not Adult Bees Sunken punctured cappings, Ropy larva, Scales showing pupal tongue	Destroy hive (Fire) State Gas Chamber for woodenware salvage Terramycin - delays the spread but is not a cure
European Foulbrood No spores During brood season	Larva change from white to brown to grey Larva appear twisted in cell	Re-Queen colony, strong queen, break in brood cycle. Terramycin also used
Viruses		
Sacbrood During 1st half of brood season	Dead brood scattered among healthy brood Punctured cappings, dead brood appear sac-like. Brood change from white to yellow to grey to black	Strong colony, Re-queening No treatment available
Parasitic Mite Syndrome (PMS) Early Fall colony collapse	Symptoms look like a cross between foulbrood and sacbrood, associated with Varroa Mites Brood appear deflated may have grey or brown spots	Control Varroa Mites Fumagilin
Fungal		
Chalkbrood Spore forming Fungus During brood season	Dead brood are chalky white, appear fluffy may have black or brown spots	Re-queen with resistant stock No treatment available
Stonebrood	Mummification of dead brood, hard and solid	No treatment available, rarely seen
<u>Adult Diseases</u>		
Spore-Forming Protozoan		
Nosema Apis Common in Spring	Bee poop on front of hive Reduces Queen egg laying, shortens worker's lifespan	No recommended treatment Maintain strong hive
Fungal		
Nosema Ceranae	Microscopic fungus that suppresses a bees immune system Relatively no visible symptoms, sudden hive decline @8 days Diagnosis requires viewing prepared slide under microscope	No recommended treatment Maintain strong hive

Honeybee Maladies Quick Reference

Problem	Symptoms	Treatment
Undetermined		
Colony Collapse Disorder (CCD) May be caused by viruses, malnutrition, pesticides, pathogens and any number of things. This is still	Sudden disappearance of nearly all bees, Capped Brood present, honey and pollen present, Queen is present. Pre-collapse symptoms: Insufficient workers to maintain brood, Worker bees are mostly young adult bees Colony refuses to eat sugar syrup or pollen supplement	Do not combine affected colony with strong colony Store affected equipment away from bee access Treat secondary infections such as European Foulbrood being researched accordingly
Viruses		
Paralysis Chronic Bee Paralysis (CBPV) Acute Bee Paralysis (ABPV)	Uncontrolled trembling, unable to fly, lose hair appear shiny or greasy, large numbers found on hive front porch	No treatment available Add a frame or two of capped brood to build up colony
Excessive water		
Dysentery	Too much water in bee's body Bee poop everywhere, on comb, hive entrance	Proper hive ventilation, early fall feeding to allow bees to properly ripen stores before winter
Parasitic Mites		
Varroa Destructor	Adult mites feed on adult bees, mite larvae feed on bee larvae. Test for mite count: Sticky board, Sugar roll, Ether roll. Determine mite level then act	Drone brood removal, comb culling, Mite Resistant Breed Chemicals
Tracheal Mites	Crawling bees unable to fly, K-Wing, colony reduces in size	Menthol, grease patties, Mite Resistant Breed
<u>Pests</u>		
Small Hive Beetle	Adult beetles visible running on top frames, larvae tunnel through combs causing damage	Checkmite+, Strong colony, remove unused equipment, destroy beetles ASAP
Ants	Visible in hive,	Strong hive, Raise hive off ground, keep vegetation cut down around hive
Bee Lice	Prefer nurse bees, larva burrow into cell cappings	Varroa treatment kills Lice
Wax Moths	Cocoons, damaged frames, silk everywhere	Para Dichlorobenzene flakes in unused supers, hive bodies kills adult and larva but not eggs freeze frames to kill eggs
Mice	Nests from fall to spring	Reduce entrance size
Skunks, Opossums, Raccoons	Damaged hive, Brood eaten	Tack board, Raised Hive, reduce entrance size
Bears	Destroyed hive, Brood eaten	Electric Fence