



Master Beekeeping Program

Lesson 8-9 Diseases, Parasites & Pests....Oh my



Diseases

American Foulbrood

Prevention & Control

- Remove and destroy all infected comb by burning it or placing it in a plastic bag in your garbage.
- Scrape inside surfaces and remove all propolis, wax, and burr comb.
- Remove and destroy all old or darkened comb.
- Do not try to salvage hives of 3 or 4 combs of infected bees
- DO NOT combine infected colonies with healthy colonies.
- Honey from AFB infected hives is safe for human consumption, but do not leave it where other bees can get to it.
- Extracted frames may be returned to infected colonies while they are being treated for AFB
- Prevention is the best control for AFB
- All colonies are treated with Terramycin® (TM-25) (Oxytetracycline) usually as a powdered sugar dust mixture
- You can also administer it as a syrup or sugar/shortening patty during periods of nectar dearth (before and after the honey flow).
- TM-25 breaks down when in contact with moisture; so in syrup, it is viable only for about 3 days. In a dust it is good form a week and in patties it is good until the patty is used.
- Remember---Do not medicate at least 2 weeks before adding honey supers.

Syrup: Recommended for swarms and packaged bees if fed within the hive. Use 2.5 tablespoons of TM-25 in one gallon of syrup.

Dust: 1 part TM-25 to 5 parts powdered sugar. Place two tablespoons of the mix on the ends of the frames in the brood nest. Repeat the treatment 3 times, a week apart.

Patty: Place the patty on top of the frames of the bottom brood super, in the center, and with brood above and below the patty.

- a. One part TM-25, 5 parts powdered sugar, and 5 parts Crisco or other vegetable shortening. Mix TM with powdered sugar first, then warm shortening to soften and add to TM/powdered sugar mix. Make patties by placing 1/4 pound of completed mix into a waxed paper sandwich bag or between two pieces of waxed paper.
- b. One 6.4oz. Package of TM-25 to two pounds powdered sugar and two pounds Crisco or other vegetable shortening.

Terramycin® (TM-25) is used to prevent & control AFB Tylan (Tylosin) is used mainly to active infections of ABF

European Foulbrood

Prevention & Control

Follow the same prevention techniques for AFB

---For control, you must discard infected combs but no burning is required.

Treat with TM-25

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Sac Brood

Virus: Sacbrood Virus

Too small to be seen with a microscope

Identification: Diseased larvae turn gray, then black or grayish brown

Sacbrood seldom becomes serious. Remove infected combs. No other control is necessary

Chalkbrood

The Chalkbrood fungus rarely infects more than 5% to 10% of the brood.

Infected brood dries down to a mummified condition and turns chalk white.

After the larvae dies, they turn black

Chalkbrood seldom becomes serious.

There is no chemical control agent for Chalkbrood

Chilled brood

Chilled brood occurs when some of the brood around the edges of isolated brood comb get chilled.

This usually occurs when the beekeeper moves frames so that the bees cannot feed and keep some of the brood warm.

It also occurs when there is a loss of nurse bees from other factors such as pesticide kills or when there is unusually cold weather during high brood rearing seasons.

Nosema

---Highly Contagious among bees

---It attacks the lining of the mid-gut of the adult bee

---Nosema reduces the vigor of bee and shortens their life

Symptoms

There are no easily observed symptoms.

In heavy infections, you might see some bees with swollen abdomens and dysentery

Note: Besides Nosema, Dysentery is also caused by other factors, mostly relating to the diet of the bees

The only sure diagnosis of Nosema is a microscopic examination of the gut of the suspected bee

Control

Fumadil-B

½ Gram per 6 Gallons of Syrup

Bee paralysis

Virus: Chronic Bee Paralysis Virus

Virus: Acute Bee Paralysis Virus

Too small to be seen with a microscope

No vaccine or medications are available, good clean combs and hygienic bees will help prevent paralysis

Identification: Deformed Wings

Chronic Bee Paralysis is sometimes called "Hairless Black Syndrome"

Pests

Wax Moths

No treatment just prevention: Paradichlorobenzene Moth Crystals in stored equipment

Do not use Naphthalene (Naphtha) Moth Crystals

Small Hive Beetle

Adult beetles infest the hive and consume pollen, honey and lay eggs

Control: Permethrin (liquid) under the name of Y-Text Gardstar 40% EC Livestock and Premise Insecticide Make sure you follow the directions

Yellow Jackets

Mice

Ants

Bears

Birds

Earwigs

Skunks

Parasites

Tracheal Mites

Control:

There is only one registered compounds available for the treatment of Tracheal Mites.

Menthol Crystals placed on the top bars of the hive are used as a fumigant through sublimation. Menthol vapor is heavier than air and flows down into the hive.

Control—Shop Towel Method <http://www.wvu.edu/~agexten/varroa/treatmix.htm>

Varroa Destructor

Control:

Registered Approved Miticides

Fluvalinate (trade name: Apistan®)—(Hivastan®)

Apistan® was used extensively in the 1990's, however, many beekeepers have reported that it is ineffective for controlling Varroa, since the mites have become resistant to it.

Coumaphous Strips (Checkmate+®)

Coumaphous was also used by many beekeepers to control Varroa Mites, however, it caused many problems with queen viability and also left a long lasting residue in the wax.

Thymol Gel (trade name: Apiguard®)

Thymol + Eucalyptus Oil + Menthol tablet (trade name: Api Life Var®)

These vary in effectiveness. As with all pesticides, read and follow label directions to the letter. Improper use will cause mites to become resistant. Use of unapproved miticides can result in contamination of honey and bee products.

Mite-Away II---Formic Acid Strips (No longer recommended)

Mite-Away Quick Strips (MAQS)TM

2 strips between 2 Deep Brood Chambers or 2 strips on top of single Deep Brood Chamber

Only one application necessary to kill 95% within 7 days

Can be used during the honey flow

Reported to have some effect on Tracheal Mites also

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HopGuard™ Strips

2 strips per 5 Deep Frames

Maximum: 3 Treatments/year

Can be used during the honey flow

Hop Beta Acids-Potassium Salt

Amitraz (Apivar™ Strips)

Maximum of 2 treatments per year...spring and fall....42 days than remove

Do not use with honey supers. Must apply before and after honey supers

Integrated Pest Management (IPM)

—Non-Chemical Techniques

Freezing Drone Comb—full frame drone comb method

Cutting/Removing Drone Comb method

Screened Bottom Boards

Make a Split (Create a Broodless situation)

Notes:

Resources Online:

PSBA website: www.pugetsoundbees.org

WSBA website: www.wasba.org

National Honey Board: www.nhb.org

Bee Informed: <http://beeinformed.org/>

Honey Bee Suite - Rusty Burlew: <http://www.honeybeesuite.com/>

The Practical Beekeeper - Michael Bush: <http://www.bushfarms.com/bees.htm>

Scientific Beekeeping - Randy Oliver: <http://scientificbeekeeping.com/>

WSU Diagnostics lab: <http://entomology.wsu.edu/apis/diagnostic-lab/>

USDA Bee Testing Laboratory Beltsville MD: <http://ars.usda.gov/Services/services.htm?modecode=12-45-33-00>

Apiary Registration form: <http://agr.wa.gov/PlantsInsects/Apiary/docs/ApiaryRegistrationForm.pdf>