

Maintaining Healthy Bees: Management and Treatment

**“If you see me running. Then
things have gone poorly and
you should run too.”**

*-Amsey M.,
the Beekeeper*

Suit up when in doubt.

It is real neat when you see people working bees without protection.

For beginners it is a must that you always suit up.

You may not find out until too late that the bees are not happy that day.

Always use smoke.

Never wear BLACK.

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6. If your hive is overcrowded check for queen cells to prevent swarming.
- 7. Do not overwork your bees because it can cause stress or harm them.**

Inspecting Your Bees

Choose the fuel you will use in your smoker.

Cotton plugs

Cotton cloth

Cedar chips

Pine needles

Leaves and grass

**Never empty your lite smoker on the yard.
Empty into a can or bucket!**

Cotton

If you choose to use Cotton plug fuel purchased it at a bee supply outlet.

Denim or any other 100% cotton cloth

Never use lint from the dryer it will most likely contain contaminates such as nylon, rayon, polyester, wool or harmful chemicals.

All these are contaminates are either harmful to the bees or will just make them angry or could hurt you.



Cedar chips

Hamster or dog bedding can be used or any type of cedar chip you can buy in bulk.

Check for any additives such as chemical treatments or air fresheners.

Anything other than Cedar can harm or kill your bees and effect your health.



Pine needles

Any pine needles will do either from the immediate bee yard if available or purchased.

The same goes for pine needles you purchase, check for additives, sprays, etc. You can wash them off and let them dry before storing them for later use.

It is a little more trouble but the bees health and wellbeing is our greatest interest.

Leaves and grass

Leaf debris mixed with pine needles from the immediate bee yard can be used in a rush.

If you need some fuel in an emergency or you have run out of fuel or just forgot to pack some this will do.

Apply smoke gently but adequately.

Always start on the outside
frame away from the cluster.

“Good judgment comes from experience, and a lot of that comes from bad judgment.”

WILL ROGERS!

Reasons to inspect

Bee Population



Population should be all the way across the hive making a full box.

Most will not look this way, but should be strong enough to protect themselves and not too strong causing them to swarm.

Queen state and condition



A hive should be judged to be Queenright. Presence of eggs, larvae, and brood.

If there is a small patch of brood and no eggs or larvae, this could indicate your queen is dead or failing. A newly mated queen will be slow in producing new eggs.

Queen state and condition



Look for queen cells unhatched or hatched. The new queen may be small and hard to find. Give her 7 days and re-check. If no eggs you will need to re-queen ASAP to avoid a laying workers from developing.

Queen state and condition



A laying worker is a worker bee that has attempted to take over for a missing queen. Remember all bees except for the drones are female and capable of laying eggs. The eggs they lay are unfertilized and will make only drone brood and eventually bringing about the death of the colony.

Queen state and condition



Removal of a laying worker is difficult requiring a more experienced keepers assistance. The best solution is to add frames of brood and wait a couple of days and re-queen ASAP using the slow release method.



Brood pattern



Brood or lack thereof can tell you a lot about the condition and health of your hive. As for mentioned, the loss of the queen can cost you your hive if not caught soon enough.

Brood pattern



A poor brood pattern (shotgun brood) indicates a failing queen is present and needs to be replaced. Most queens last about 1.5 to 2 years if not superseded by the colony.

Brood pattern



Brood appearance or condition of brood can signify disease which will require immediate attention.

Keeping an eye on this tell-tell sign this is essential to maintaining a health hive.

Brood pattern



Disease present in the hive may be seen in capped brood with holes in caps or dead brood in cells. This can be a very serious condition and requires an inspector or very experienced keeper to check and advise what action should be taken.

Overcrowding



Too many bees in a small space can be dangerous to the survival of you hive.

If they run out of room they will swarm. A swarming frenzy can completely empty a hive costing you money and a neighbor (soon to be former friend) a headache.

Feed resources in hive

Pollen and Honey are the two most essential resources for nutrition for the queen, bees and larvae.

Honey is of course produced by the bees from nectar or sugar water. This concerns only the stores they build up for survival.

In times of dearth or the seasonal lack of nectar producing plants, supplemental feeding is necessary.

Feed resources in hive

Remember: Bees like the real and natural resources above supplements, much like us. Would you want a happy meal from McDonalds or a complete meal from Logans?

Pest, disease awareness and testing

Testing for pests can be visual or collected.

If you see Varroa Mites on your bees your colony is heavily infested and the hive needs immediate attention. Always take into consideration the honey flow.

Treat as prescribed by the manufacture of the treatment.
Testing or collection can be done with various methods.

IPM boards to check drop rate of mites.

Sugar shake.

Alcohol shake.

Pest, disease awareness and testing

Testing for pests can be visual or collected.

A **IPM boards** (Sticky Board) is used to check the drop rate of mites that have died or fallen off the bees and stuck to the board.

This method is used in conjunction with a screen bottom board.

It is used to observe the effectiveness of a treatment and can be used to monitor the presence of mites. It is not the best option for monitoring the presence of mites.

Pest, disease awareness and testing

Testing for pests can be visual or collected.

The **Sugar shake** uses a container having a screen top in which you gather a given number of bees into and apply powdered sugar to the bees.

You roll the container around covering the bees with sugar and dislodging the mites.

You shake the container over another container filled with water which exposes the mites to make the determination as to treat or not.

The bees can be returned to the hive.

Pest, disease awareness and testing

The **Alcohol shake** is much the same as the sugar shake except the bees are killed. You shake the bees around in a sealed jar to dislodge the mites. The mites cling to the wall of the jar where you can count them and make the same choice. The dead bees and mites are discarded.

Pest, disease awareness and testing

If you see Hive Beetles in high numbers you may be able to control them. With this treatment the same is applied as prescribed by the manufacture.

The diseases within the hive may need a more experienced eye especially that of the bee inspector or a very experienced beekeeper.

Some diseases are tricky and may look like one thing and be another more serious and deadly problem.



Lesser Wax Moth



**The best defense is a strong healthy hive.
No excess equipment to give them room
to do their dirty work.**

Stored Equipment with wax inside can have
Paramoth crystals applied for winter storage.

Varroa Mite on Drone Brood



Small Hive Beetle (*Aethina tumida*)

The small hive beetle, *Aethina tumida* Murray, is native to sub-Saharan Africa where it is an occasional pest in colonies of African subspecies of the western honey bee (Hymenoptera: Apidae, *Apis mellifera* Linnaeus). However, the beetle has been found outside of its native range where it can cause considerable damage to colonies of European subspecies of honey bees. Because of its rapid spread, the small hive beetle is studied increasingly, both for its economic importance and biological significance.



Small hive beetles were confirmed in the southeastern United States in 1998 in a commercial apiary in Florida, but previously unidentified specimens indicate its presence in the U.S. since at least 1996. The small hive beetle initially appeared in port cities such as Charleston, South Carolina and Savannah, Georgia as well as parts of Florida, and since has spread to much of the U.S.

Medication Notes:

- ❑ Always follow manufacturers directions. If left in too long, the treatment can encourage resistance.
- ❑ Medications have different active ingredients and work in different ways to control the pest and/or disease.
- ❑ Using different products on a rotational basis may be effective in reducing resistance.

EPA-registered Pesticide Products Approved for Use Against Varroa Mites in Bee Hives

Registration #	Product Name	Active Ingredient
2724-406	ZOECON RF-318 APISTAN STRIP	Fluvalinate (10.25%)
2724-406-62042	APISTAN ANTI-VARROA MITE STRIPS	
61671-3	FOR-MITE	Formic acid (65.9%)
70950-2	AVACHEM SUCROSE OCTANOATE [40.0%]	Sucrose octanoate (40%)
70950-2-2205	SUCROCIDE	
70950-2-84710	SUCRASHIELD	
73291-1	API LIFE VAR	Thymol (74.09%), Oil of eucalyptus (16%), Menthol (3.73%)
75710-2	MITE-AWAY QUICK STRIPS	Formic acid (46.7%)

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Registration #	Product Name	Active Ingredient
79671-1	AFIGUARD	Thymol (25%)
83623-2	HOPGUARD II	Hop beta acids resin (16%)
87243-1	Apivar	Amitraz (3.33%)
91266-1	OXALIC ACID DIHYDRATE	Oxalic acid (100%)
91266-1-73291	OXALIC ACID DIHYDRATE	
91266-1-91832	OXALIC ACID DIHYDRATE	
11556-138	CHECKMITE+ BEE HIVE PEST CONTROL STRIP	Coumaphos (10%)
11556-138-61671	CHECKMITE+ BEE HIVE PEST CONTROL STRIP	

Pest Treatment

Varroa Mites: Apivar, Apistan, Check Mite+, MiteAway Quick Strips, Screen Bottom Boards and Oxalic Acid.

Beetles: Check Mite +, various traps, Guardstar ground treatment, Diatomaceous Earth, Nematodes.

Brood Diseases: Terramycin, Tylan

Tracial mites: Mite-A-Thol Menthol crystals

Nosema Ceranae: Fumagilin-B , fumidil.

Brood Diseases (Viruses)

American Foulbrood: Deadly, in most if not all cases non-treatable. Burn the bees and all equipment involved.

European Foulbrood: Treatable with antibiotics not usually fatal but is destructive.

Nosema Cerana: Treatable in a prophylactic treatment schedule. Can be fatal . A silent killer. Works like constipation.

Nosema Apis: Treatable with a nectar flow or light feeding . Generally appears as Diarrhea.

Chalkbrood: Not treatable but can be overcome in a strong colony with a young queen. Looks similar to AFB but not rosy brood.

Sacbrood : Common but not fatal. Re-queen and add brood and bees from another colony to strengthen the colony.

A COMPARISON OF SYMPTOMS OF VARIOUS BROOD DISEASES OF HONEY BEES

Symptom	American foulbrood	European foulbrood	Sacbrood	Chalkbrood
Appearance of brood comb	Sealed brood. Discolored, sunken, or punctured cappings.	Unsealed brood. Some sealed brood in advanced cases with discolored, sunken or punctured cappings.	Sealed brood. Scattered cells with punctured cappings.	Sealed and unsealed brood. Affected larvae usually on outer fringes.
Age of dead brood	Usually older sealed larvae or young pupae. Upright in cells.	Usually young unsealed larvae; occasionally older sealed larvae. Typically in coiled stage.	Usually older sealed larvae; occasionally young unsealed larvae. Upright in cells.	Usually older larvae, Upright in cells.
Color of dead brood	Dull white, becoming light brown, coffee brown to dark brown, or almost black.	Dull white, becoming yellowish white to brown, dark brown, or almost black.	Grayish or straw-colored becoming brown, grayish black, or black; head end darker.	Chalk white. Some times mottled with black spots.
Consistency of dead brood	Soft, becoming sticky to ropy.	Watery; rarely sticky or ropy. Granular.	Watery and granular; tough skin forms a sac.	Variable, watery and granular
Odor of dead brood	Slight to pronounced characteristic odor of decay.	Slightly to penetratingly sour.	None to slightly sour.	Slight non-objectionable.
Scale characteristic	Uniformly lies flat on lower side of cell. Adheres tightly to cell wall. Fine, threadlike tongue of dead pupae may be present. Head lies flat. Black in color.	Usually twisted in cell. Does not adhere tightly to cell wall. Rubbery. Black in color.	Head prominently curled towards center of cell. Does not adhere tightly to cell wall. Rough texture. Brittle. Black in color.	Does not adhere to cell wall. Brittle chalky white to black in color.

From USDA

Thank you for your
interest and Good Luck
with your hives.

The End!