

Herbs helpful towards honey bee's health



2-Benefits of general health

- Build physical strength .
- Resistance to infections

Varied diet, candipolline gold ref
honey

control of acarians

Tonic for strong colonies

Add 3-4 drops of lemongrass and 3-4 drops of spearmint
essential oils to 1 kg sugar :1litre water syrup.

3 Botanicals for varroa (acaricides)



Essential oil application

- Add 5-6 drops of thyme or lavender essential oil to 200ml of mineral oil
- Bee calm spray - page 4
- Apiguard
- Precautions with essential oils
- Add a couple of fresh or dried mugwort leaves to fondant or syrup feed

Bee Calm spray

- 'Just dig it farms', USA use this instead of smoking the bees
- used for inspection, uniting, new frames, harvesting, new queen
- Does not taint honey
- Blocks pores of varroa shutting down nervous system
- Spray bees and inside hives walls. Do not over spray as left overs can go mouldy.

Syrup 250ml sugar:250ml water
500ml water : 16 drops essential oils.
Whisk water and 16 drops of your oil mix to emulsify it, it goes milky. Cool syrup and add to spray bottle with emulsified water / oils mix. Shake before use.

Wintergreen photo

- Lemongrass- smells like queen-calms, attracts bees
 - Spearmint- miticide; anti fungal, insecticide
- optional substitutes
- Thyme- *use smaller quantity, very strong* antibacterial, fungal, miticide, insecticide
 - Wintergreen- antifungal; miticide; deters robbing insects, hive beetle, foul brood
 - Ti Tree- anti bacterial & fungal, insecticide, varroa
 - Lavender- anti bacterial, calming, insecticide



5.Smoking with dried herbs

- Chaparelle /Creosote bush (*Larrea tridentata*) ref
- Tansy (*Tanacetum vulgare*), ,
- **Methods of applications-**



6 Smoking methods

- Smoking method 1

I use a little tansy or chaperelle smoke or icing sugar on most inspections. I haven't noticed any unpleasant taint. Both herbs are very bitter..



- Smoking method 2

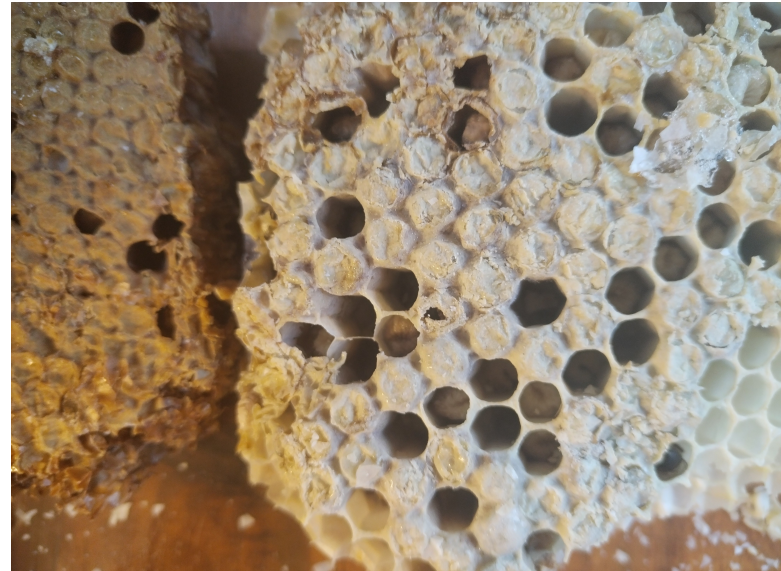
To minimise use of chaperelle while staying effective.

Remove queen for 10 days, so no eggs. Return queen

Wait 7 more days. On day 8 after queen is released, smoke with Chaparelle/ Creosote bush every day for 7 days. This exposes all mites to the smoke; ref Top bar Bee keeping, Les Crowder & Heather Harrell.

7 No foundation hives

- Bees build varying sized comb to fit the different sized brood.
This allows less room for the varroa.



8 Bee health and varroa_{bees4life;ref;}

- Wide gene pool
(Wild bees? What are our preferences when selecting queen cells, Russian and other varroa immune bees)



9 Other natural controls of varroa

-Ants and icing sugar

Biological control

Formic Acid treatment or allowing ants to live with the bees?

- Pseudoscorpions (chelifer cancroides, Ellingsenius fulleri / indicus.) feed on mites. Historically co habited bee hives.

Easy to breed at 18C, harmless to humans.

Sugar dusting

hairstylist's powder puffer; ref; to puff icing sugar over the bees.
Use instead of smoke to calm the bees; remove mites;
to get the bees in the habit of cleaning each other.

Mesh over the bars method to apply icing sugar.

- Make your own icing sugar due to corn starch.

Mineral oil

Bee gym

10 Control of tracheal mites

- **Menthol crystals**

Start to melt at 70F/21C

Best 80-85F/30C. If this hot when no honey flow put menthol crystals in 200mm x 200mm porous bag and leave over frames

- In cooler climates make menthol fondant 1kg granulated sugar 500g vegetable shortening, 3g menthol crystals. Use before or after honey flow.

Menthol disturbs tracheal mite's lifecycle as females can't find /smell the young bees to lay eggs
on.ref.Clemson bee education

- Caution- use cautiously as it stops the bees being able to smell the queen.



11 Natural products smoke and its effect on *Acarapis woodi* and honey bees

- Apidologie 35 (2004) 341–349 © INRA/DIB-AGIB/ EDP Sciences, 2004DOI: 10.1051/apido:20040 Frank A. EISCHENa *, Carlos H. VERGARAb**
- Honey Bee Unit, Weslaco, TX USA Departamento Quimica Y Biologia, Universidad de las Americas, Puebla, 72820 Santa Catarina Matir, Puebla,Mexico accepted 1st September 2003)
- Abstract – We tested the effect natural products smoke has on the honey bee tracheal mite (*Acarapis woodi*)and honey bees. Plant materials screened for activity included coffee beans (*Coffea arabica*), corncobs (*Zeamays*),chaparelle/ creosote bush (*Larrea tridentata*), eucalyptus (*Eucalyptus* sp.), orange peel (*Citrus sinensis*), pecan leaves (*Carya illinoiensis*), dead and fresh pine needles (*Pinus cembroides*), mesquite leaves (*Prosopisglandulosa*) and tobacco (*Nicotiana tabacum*) and un treated control. **Low but significant mite mortality was caused by the smoke of pine needles, mesquite, corncobs, and coffee beans.**
- **Bee mortality at 18 and 5 days after 6 minutes smoking is high with corncobs.**
- **Pecan and mesquite leaf smoke caused regurgitation and anaesthesia.**

12. *L. tridentata* (Chaparelle /creosote bush)

- **The smoke of Chaparrelle / *L. tridentata* killed more adult *A. woodi* than other materials in the study. It was not effective against immatures.**
- **Efficacy was modest (ca. 70%) and it caused transitory bee anaesthesia. The study does not recommend using this material as a mite control**
- **. Older leaves or whole plant are more effective killing adult male tracheal mites than young leaves.**
- **Smoke time ideal is 6 minutes**
- Second treatment is not needed
- My Conclusion

Use Menthol crystals, 1 week;
Thymol /Apiguard 2 weeks and
Chaparelle smoking once during week 4.



13 Control of chalk brood with neem (*Azadirachta Indica*) juice, Apiguard



14 Other essential oil uses

- Lemongrass- swarm lure sprinkle a few drops on frames with some honey in bait hive.
- Cinnamon – sprinkle a few drops on exterior of hive and around ground and legs/stand to deter insects and ants.
- Peppermint - sprinkle a few drops on bee suit to deters bees
- lavender- sprinkle a few drops on bee suit to deters bees
- Insect repellent with these oils covers human/ testosterone smell which encourages bees to sting. Use on bee suit around armpits.
- BUG SPRAY from Backyard Beekeeping USA. In to 200ml distilled water/ witch hazel add some or all of these oils. Up to 100 drops of essential oils (8ml).Citronella,Myrtle(sweet),Lavender, Ti Tree, Lemon grass, Peppermint, Rosemary. Shake before use, or whizz to emulsify.
- Helpful herbs' mix has cedarwood and eucalyptus as well as citronella, tea tree, lavender and myrtle.

15 References

Page 2- Candipolleine gold. Bee suppliers. Beckys Beezz etc

- Page 5- Chaparelle. Available online, various uk suppliers.
- Page 6- Top-Bar Beekeeping, Les Crowder & Heather Harrell
- Page 9 <https://bees4life.org/bee-extinction/solutions/sustainable-beekeeping/natural-treatments-in-bee-hives>
- Page 9 Refillable Talc Fiber Blower Puffer Barbers Hairdressers Talcum Spray Bot-QV on eBay!
- Page 10 <https://www.clemson.edu/extension/beekeepers/fact-sheets-publications/tracheal-mite-honey-bee.html#:~:text=discolored%20and%20darkened.-,Control,the%20bees%20at%20certain%20temperatures.>
- Page 11,12 Natural products smoke and its effect on *Acarapis woodi* and honey bees <https://www.apidologie.org/articles/apido/pdf/2004/04/M4016.pdf>
- Throughout - The Barefoot bee keeper, Phillip Chandler

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