

Three Rivers Beekeepers

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“Treatments and
Other Interesting Topics”
(subject to interpretation)

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Honey House Rules

- Think about the flow of product
- Warming room, bulk honey storage, bottling
- Plan for expansion, plan for success
 - Where do you want to be in 5-10 yrs?
- Is it bee tight? Air conditioned?
- Power supply, lighting, work space, storage space, cost of materials, time it takes to build:
 - Figure estimate, then double it
- You can never have enough space

Planning Ahead

From the 1927 *The Old Farmer's Almanac*:

The successful farmer is always forehanded.

He pushes his work instead of allowing his work to push him.

He plans his necessary work well ahead and gets much of it done before the rush of the season.

This policy gives opportunity for more thorough, intelligent and productive work.

When does spring
management in the bee
yard begin?

The previous fall

Biennial Beekeeping

- Biennial” – an adjective to describe a two-year process, or a two-season course of action.
- Horticulture – growing vegetation during the first year to produce flowers/fruit the second year.
Example: winter wheat.
- Biennial Beekeeping – a process of establishing colonies in the fall of the current year, setting the stage for rapid spring build up and monster honey crops the following spring.

Another View: Quarterly Planning

- **August-September-October**

 - Feed, treat, prepare for winter

 - Order equipment for next spring

- **November-December-January**

 - My Sabbath, Sabbatical, Fallow Dormancy

 - Assemble equipment, attend national meetings

 - Review my notes, looking over records, set goals

- **February-March-April**

 - Build-up, brood expansion, swarm prevention

- **May-June-July**

 - Supering hives, queen rearing, honey harvest

 - Splitting and requeening hives, culling frames

Treatments

and treatment options

What are we treating?

Why are we treating?

- Parasitic mites (Varroa) and the associated stress and virus potential
- Nutritional Deficiencies (Nosema, monoculture, starvation from drought, GMO pollen)
- Environmental Stress (pollution, pesticides)
- Disease (namely American Foul Brood)
- Goal of treatments is to prevent problems, counter-act environmental stresses, and promote healthy, productive colonies.

Part 1: Treatment Options

- Conventional Pharmaceuticals
 - Apistan/fluvalinate, Checkmite+/coumaphos
 - Maverik (amitraz), Hivastan
- Treatment-free
 - No treatments, no intervention
- “Natural” or “Soft”
 - Grease patties, thymol, essential oils, HopGuard
- Organic
 - Formic Acid, oxalic acid

Conventional Pharmaceuticals

- Effective, though resistance is developing
- Expensive
- Residues are accumulating in comb/honey
- Special handling requirements (i.e. neoprene gloves needed)
- Cannot be used when honey supers are on the hive
- **FOLLOW THE DIRECTIONS!**

Treatment Free

- Definition is still kind of fuzzy
- Debates on manipulations, feeding, etc.
- Live and let die philosophy
- Run the risk that the bees will die and need to be replaced.
- No residues, no accumulations
- No health risks to beekeeper
- Cheap (unless bees die) and less labor
- Survival of the fittest (?)

Natural or Soft Treatments

- Food Grade type chemicals (menthol, powdered sugar, grease patties)
- Safe (GRAS), but maybe not to the bee
- Not always effective, may require multiple treatments, but little risk of resistance
- Not really “natural,” not approved
- Not fully studied, prone to anecdotal evidence (“my bees have never looked better”).

Organic

- Somewhat confused with “natural”
- Can be very effective (formic acid)
- Organic does equal safe or non-toxic, to the bees or to the beekeeper
- Not always approved (oxalic acid is approved in Canada, but not USA)

What kind of hive is lends itself toward:

--“Natural Beekeeping?”

--Chemical / Industrial
Beekeeping?

- A: Langstroth
- B: Top Bar Hive / Warre hive
- C: All of the above
- D: None of the above

Randy Oliver's Philosophy

- Epigenetics – how environmental stresses and/or treatments affect the expression of genes.
- Pharmaceuticals can turn a gene for survival “off,” rendering the bee dependent upon the treatment.
- “Virulent Pressure” (mite stress) may keep these genes turned “on.”

Approved vs. Unapproved Treatments

“Follow the money”

“Everything I want to do is Illegal”

By Joel Salatin

IPM Integrated Pest Management

- Monitor pest levels, treat when necessary
Sticky boards, ether rolls, powdered sugar rolls
- Utilize mechanical and cultural assistance
screen bottom boards, hygienic behavior, brood breaks, small cell foundation, freezing drone comb
- Alternative is to treat prophylactically or routinely rather than “as needed”
(preventative rather than prescriptive)
Fumagilin-B, terramycin

Part 2: Application Options

- Physical placement of product in hive
- Physical contact with bees
- Fumigation / Evaporation - gas
- Dusting / Drenching – physical contact
- Syrup feeding – ingestion
- Temperature sensitivity of some products
- Timing of brood development

Varroa Treatments

- Apistan / fluvalinate
- Checkmite+ / coumaphos
 - If you use these, rotate treatments
resistance increasing
- Hivestan – bees remove, contact miticide
- Hopguard – new this year, natural strips
- Sucroside – spray each frame, or drench

Fumigation - Varroa

- Thymol products (60 to 100 degrees)

Apiguard (tins of gel)

Two applications, two weeks apart

Api Life Var Thymol Strips

Three treatments, one week apart
also contains eucalyptus, menthol

Close off SBB with these products

Colder temperatures, less effective, longer time

Fumigation - Varroa

- Formic Acid
 - Mite-Away II pads (old formulation)
 - MAQS (Mite-Away Quick Strips)
 - Best to leave SBB open with MAQS
 - Queen damage ?
- FGMO (food grade mineral oil)
 - Fortified with essential oils
- Sumac berries

FGMO







Different Options

- Powdered Sugar – “Dowda” method
- Medicated powdered sugar
 - 2 lbs. powdered sugar
 - 3.2 oz. finely ground garlic, spice aisle
 - 1.6 oz. finely ground cinnamon
 - 6.4 oz. fumidil / fumagilin-B powder
 - 6.4 oz. terramycin powder, farm supply store

 - Treat 2 tablespoons per colony
 - Best to treat at night when everybody is home

Old Stand-bys

- Grease patties
 - 2 parts granulated sugar
 - 1 part vegetable shortening (Crisco)
 - Add honey to increase palatability
 - Add essential oils (peppermint, tea tree)
 - Can be wrapped in blue shop towel to aid in their destruction

Other Old Stand-bys

- Mentholated shop towels

1/2 cup menthol crystals, pyrex

Fill to 1 cup line with cooking oil

Microwave until 90% dissolved

Pour over 6 blue shop towels

Refrigerate until ready to use

Can be used with thymol crystals in the same manner.

New Twist: coconut oil

- Virgin coconut oil, non-deodorized
- Not the stuff from Wal-Mart
- Paper towels soak it up, place above brood nest, allow bees to tear up
- Pioneered by Red Bennett

www.nutiva.com/articles/colony-collapse-disorder

Feeding Options - Nosema

- Thymolated Syrup
 - $\frac{1}{2}$ gram per gallon syrup
 - must be dissolved in alcohol
- Fumagilin-B
- Nosevit (natural, from oak bark)
- Honey-B-Healthy - 1 tsp per quart
- Protein Supplements / pollen substitutes

Foul Brood Treatments

- We generally treat for prevention, which is really suppression of bacteria
- Only cure of infected colonies is fire
- Terramycin – mixed with powdered sugar
- Used to mix this in grease patties
- Tylan – for terramycin resistant colonies, mix with powdered sugar and dust
- Terra-Patties to feed like pollen sub

Other Diseases?

- Control Varroa, which eliminates viruses, poor immune system, winter stress
- Control Nosema, which is a protein deficiency disease that weakens the bee
- Provide for optimal nutrition through supplemental feeding and pollen subs.
- Pretty much put other diseases to rest

Supplemental Feeding

- To insure sufficient stores for winter survival.
- Best to feed early, allow bees to cure and store. Too much water = dysentery
- Sucrose vs. HFCS
- Fall feeding 2:1 sugar:water ratio
- Optional additions of Honey-B-Healthy or thymol, fumagillin-B.

Nutritional Treatments

- Pollen Substitute Patties
- Placed on the hive before the coldest winter weather (around mid-December)
- Two patties placed under the inner cover
- Patties come in a variety of mixes for different purposes.

Starvation Avoidance Emergency Feeding

- Candy Boards – a lot of work

- “Ted’s Mush”

Fill a gallon zip-lock baggy with 4 lbs. dry sugar, pour in 1 cup water. Seal and squish to mix, will be mushy. Lay across top bars and make several slits with an utility knife or razor blade. Cover with an empty super and outer cover.

- Mountain Camp method

Mountain Camp Method

- Remove inner cover and cover cluster with a sheet of newspaper.
- Pour two, four- or five-pound bags of sugar over the newspaper.
- Set an empty super (no frames) over the pile of sugar and put the inner cover and outer cover on top of the super.
- Alternative: pour the sugar around the hole in the inner cover, top with super.

