

*"When all else fails, read the instructions."*

— Agnes Allen

I've had bouts of déjà vu lately. I've spoken with many beekeepers whose tales of fall and winter losses very much remind me of the days when powdered sugar dusting was the fad Varroa treatment. Only this time, the fad is oxalic acid, not powdered sugar. People tell me that their colonies died over winter and I ask what their Varroa treatment strategy is. Many say they treated in fall with oxalic acid. The problem is that fall treatments of brooded-up colonies are not called for in the oxalic acid label's instructions and they aren't expected to have any meaningful effect in the long term.

Faithful readers may recall April 2015's article, "[What's the Deal with Oxalic Acid?](#)", published soon after oxalic acid was registered in the US as a legal treatment for Varroa mites. In it, I said, "It seems to me that oxalic acid will be a useful item to have in the bottom of my toolkit for certain situations." We now have about three years of beekeeper experience with it. I still haven't felt compelled to use it myself but I have spoken to many beekeepers who are relying on it. These folks fall into two camps: those who are using it correctly and those who aren't.

### The wrong ways

Some clever beekeepers try to compensate for the fact that oxalic acid isn't effective when brood is present by following You-Tube directions and applying it repeatedly over several weeks, thereby zapping emerging mites as they exit brood cells. However this is an off-label (not legally prescribed) use. It also subjects the bees and particularly the queen to excessive acid exposure. Experimentation by researchers such as Randy Oliver has shown that to have any worthwhile effect, quite a few weekly applications must be made (fully a half dozen or more), which seems to fly in the face of the desire for an "easy treatment". Other legal miticides such as ApiGuard and ApiVar provide much better results and are genuinely designed to be long-acting treatments that kill

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**READ THIS LABEL:** Read the entire label. This product must be used strictly in accordance with this label's precautionary statements and use directions, as well as with all applicable State and Federal laws and regulations.

### USE RESTRICTIONS:

Oxalic Acid Dihydrate applications are for outdoor use only.

**DO NOT** use in enclosed overwintering areas.

Use only in late fall or early spring when little or no brood is present. Oxalic Acid Dihydrate might damage bee brood. Oxalic Acid Dihydrate will not control Varroa mites in capped brood.

Do people read the pesticide label and follow the law? Not so much, judging from what they tell me. (The highlighting is mine.)

mites as they emerge. MiteAway Quick Strips/Formic Pro is an effective one-and-done treatment that kills mites under the cappings.

Aside from not being legal, do these clever oxalic acid application methods work? My anecdotal evidence says "no", based on the number of disappointed beekeepers I have talked to. Their experience reminds me of a highly innovative tip that my brother, a mechanical engineer who specializes in utility technology, once gave me for reducing my electricity bills. "All you have to do" he said, "is set a brick on top of your electric meter."

Incredulous, I asked, "Really? Does that work?"

"Well," he replied, "it all depends on how hard you set the brick on the meter."

### The right way

The beekeepers who tell me they are happy with oxalic acid are the ones who are using it properly. For them, oxalic acid is not their go-to first-choice (only choice?) treatment; it is solely used for winter clean-up. Their main treatment

is some other legal miticide that is applied under appropriate conditions, for example ApiGuard in August or September. They monitor Varroa mite levels to ensure that their main treatment has been sufficiently effective. Then in December, when the colony is broodless or nearly so, they use oxalic acid specifically as a clean-up treatment to polish off remaining mites. In March, their bees are relatively mite-free.

### Directions versus rules

One vexing issue with oxalic acid is that vaporizers contain their own instructions. However make no mistake about it: the legal, must-follow instructions for a pesticide are those that come with the pesticide, not those that come with an applicator device. The oxalic acid applicator device is not a regulated product; the oxalic acid itself is. You can rely on the device's instructions to learn how to mechanically operate the device but those instructions are not valid with respect to dosage, timing and other usage factors related to the pesticide. It may very well be that the device instructions were written in the marketing department of the Chinese factory that made the device, without any regard whatsoever for US regulations.

Similarly, do you think that the bozo on You-Tube who gets his/her buddy to cell-phone-video him/her showing us how to apply oxalic acid is smarter than the scientists who developed and approved the EPA label? If so... well never mind, because if you read my articles and have gotten this far in this one then I know you aren't that stupid.

### Knowledge is power

Not only is it included with the legitimate product, the legal pesticide label for oxalic acid, with usage instructions, is easily found on the [internet](#) by Googling "oxalic acid EPA label".

This may sound cold-hearted but the fact of the matter is that if someone is not capable of reading and following the pesticide label, they are not competent to be the person responsible for the proper application of that pesticide. If a

VARROX®-Vaporizer

Brief instructions

English

Please read the whole user instructions!

1. Fill 1 or 2 spoons (1 or 2 g resp.) of oxalic acid dihydrate into the pan.
2. Insert the VARROX through the flight opening of the hive and position the pan under the bees.
3. Seal the entrance of the hive using strips of damp foam or cloth.
4. Attach the battery-clips to a car battery (12V, 12A) for exactly 2 1/2 minutes.
5. Disconnect the battery and leave the VARROX in the hive for another 2 minutes.
6. Remove the VARROX from the hive and cool down the pan in water.
7. Keep the hive shut with strips of foam or cloth for another 10 minutes.
8. Meanwhile the next hive may be treated.

The instructions on vaporizers should only be used for understanding how to physically operate the device. Don't assume they are complete or accurate with respect to the dose, timing, frequency and other application factors that are included in the legal label.

competent person is overseeing someone else as they apply it, that is okay, but only a well-informed, capable person should be making decisions about how, when and why the pesticide is applied.

Regardless of what Varroa treatment you use, monitor later to ensure that it was effective. Also monitor after a month or two to ensure that the mite numbers haven't dramatically rebounded. If they have, another treatment cycle is warranted with a season-appropriate, effective miticide.

An excellent up-to-date guide to current Varroa treatments with detailed instructions and videos that describe when, why and how to use them is available from the [Honey Bee Health Coalition](#).

Don't be the guy scratching his head asking, "What happened?" Use the right tool for the right job at the right time in the right way, and be a successful beekeeper.

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