



from the **U. C. APIARIES** University of California



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MAQS and Respirators

The long wait is over. Mite Away Quick Strips are available to beekeepers across the country for use in controlling varroa mites. Although they seem to be very easy to use and effective, there are some U.S. label instructions that are very important to you.

“Handler Personal Protective Equipment (PPE): Applicators and other handlers must wear coveralls over a long-sleeved shirt, long pants, socks and shoes, acid resistant gloves (PVC, neoprene, or nitrile), and protective eyewear. Wear a respirator with an organic-vapor removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for

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pesticides (MSHA/NIOSH approval number prefix TC-14G), or a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with any N, R, P or HE prefilter. Clean or replace PPE at end of each day's work period. Rinse off pesticides at rest breaks. Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry."

No one is supposed to go into the hives for the first 72 hours following treatment. After that, no one is supposed to enter the hives, without a respirator, until the end of the seven-day treatment period.

The State of California is extremely cautious about protecting agricultural workers from exposure to toxic chemicals. This statement is on the label: "Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers, and restricted-entry interval."

Anyone supervising the use of this pesticide is responsible for providing all the personal protective equipment listed on the label, being sure that it is in perfect operating condition, and that it is used by employees, or those they are supervising, as applications are being made.

Because of such strict precautions, at least one county, as well as Mann Lake Ltd., is demanding an operator ID number or applicator license number for those wishing to purchase the strips.

Actually, for a purchase of just a few strips at a beekeeping supply outlet, that definitely should not be the case. However, if the order is placed by a commercial beekeeper, or if a whole bunch of small scale beekeepers combine their order into one, those will be considered to be a commercial order. It would not be a bad idea for commercial beekeepers to have an operator ID, but that should not be coerced on someone using only a few strips. Is an operator ID the same as a Section 18 permit that requires a passing grade on a test? No. This simply requires a visit to the County Ag Commissioner's office. Since the ag commissioners are not very likely to want hundreds of people coming in for IDs to use a few strips, it would be a good idea for the counties to contact Mann Lake and tell the company that it is OK to sell combined orders to small scale beekeepers without special certification. With these strips, there is no California regulation requiring such documentation for purchase of Section 3 materials.

I hope that these strips will do the job on the mites that we desire and that we will not encounter negative side effects that, so far, have escaped detection.

Hop Guard Awaiting Comments

In the June 3, 2011, Notice of Proposed and Final Decisions from CA DPR (Volume 2011-22) it was announced that Hop Guard, the formulated beta acids extract of hop, designed for varroa mite

control, is in the 30-day comment period before being registered for use in CA.

If no serious reservations are expressed over the intended use of the product, Hop Guard will become registered as a Section 18 Emergency Exemption product in CA. Yes, that does mean that a beekeeper has to visit the ag commissioner to get a permit to use the material. If handled like other Section 18 products, a supplier will not let you purchase Hop Guard without supplying your permit number.

Be judicious when trying Hop Guard (treat only a few, not all of your colonies) at first. It has not been on the market previously and there will be a learning curve before beekeepers determine how best to use it. The same can be said for Mite Away Quick Strips.

No Delay in Voting

Despite a request from the California State Beekeepers' Association (CSBA) to postpone the referendum vote on the formation of the California Apiary Research Commission, the Department of Food and Agriculture (CDFA) intends to go ahead with the vote it has scheduled for July.

In response to the expressed concern that there appears to be a great deal of misinformation surrounding the functions of the possible commission buzzing around the rumor mill, CSBA was told that it could generate a pre-vote, fact sheet-like document for mailing. CDFA would mail it, after reading it to be sure that it was accurate, etc., to all potential voters CDFA has on its voter registration list. Obviously, following the same guidelines, anyone else could write a fact sheet and submit it through CDFA, I

presume. That (or those) mailing(s) would not be for free.

Beekeeper members of CSBA (both in-state and many out-of-state members) have a long history of scraping together funds that they devote to funding honey bee research. Recently, those funds have hovered around \$50,000 per year. A substantial portion of those funds come from member dues, auctions, King Bee memberships (yes, some women also pay for that premium membership), and meager profits obtained from the research luncheon.

Due to other financial obligations, it is becoming very difficult for CSBA to continue the funding. Thus, they proposed a mechanism to acquire and expend funds for research and other beekeeper-desired projects with minimal oversight (which is never free) from our state government.

If the referendum passes, six beekeepers will be responsible for the decisions concerning the use of the funds. The board will include three beekeepers from California and three more, chosen from any state in the U.S., elected by the currently registered beekeeper voters. At least one board member must be from outside from outside California. The following little article explains this in greater detail.

Bee-ing Involved

Beekeepers, who bring their honey bees to California to earn some income, recently were reminded that the state expects to collect a 7 percent tax on their California income.

Next the beekeepers were asked to register to vote, and will be voting in July, on a referendum to determine if they are willing to assess themselves a bit more to

support the proposed new California Apiary Research Commission. Sounds like another state tax, so what could be different?

First, the commission would be run by a board of directors made up, almost entirely, of beekeepers. The enabling legislation prescribes three California beekeepers, three other beekeepers (one of whom HAS to be from outside of California), and a public member. Those board members would be selected by a second vote by the same beekeepers, across the country, who voted in the original referendum.

Second, the Apiary Commission Board of Directors would determine, annually, what the assessment rate would be. At the start, 10-25 cents per colony would be more than adequate to cover commission maintenance expenses and begin conducting some specific projects.

A commonly heard opinion from many beekeepers is that, "Research conducted by scientists fills data books and leads to peer-reviewed publications, but what good does it do for us?" Please remember that Terramycin®, tylosin, menthol, amitraz strips (now gone from the U.S.), fluvalinate strips, Sucroside®, coumaphos strips, thymol gel and tabs, formic acid pads and strips, and hops extract all came from research labs.

Another opinion expressed is that this is a way to fund UC Davis bee research. While UC Davis might obtain some of the funding, that will be entirely up to the six beekeeper-elected board members to decide. There are absolutely no restrictions on who can obtain funding or where they can be located, even internationally. The board members would have to have faith in the research actually being accomplished, but that can be heavily influenced by paying for the research in increments of accomplish-

ment (*i.e.* the Almond Board and Project *Apis m*).

The board of directors of the commission will be free of constraints concerning what research to conduct. As an example, the directors could decide to fund work on a survey study to determine which pesticides are involved in bee kills that beekeepers see in the fields across the country. Regulatory interest in "legal" uses of pesticides that result in bee kills seems to be quite low. Perhaps a system could be set up in which beekeepers, upon finding a fresh kill, could request their regulatory personnel to collect dying bees, put them in zip-top baggies, place them on ice or dry ice, then ship them (or, at least, half of a sample) to the Gastonia, NC, USDA lab for analysis. (Unfortunately, beekeeper-collected samples are considered "suspect," but the commission still could compile their data for informational purposes.)

The commission would pay for the analyses, and the analytical reports would be returned to the commission. The beekeeper would be sent a copy. He or she would provide as much information as possible about the date and place for each of the particular losses. The commission would compile all that data for periodic, public reports. A copy of the analytical sheets, and the periodic reports, would be sent from the commission directly to EPA. That would finally result in placing "official" data in the bee kill database. The reports also would be made available on the Internet, as would many other dealings of the commission.

Similar to Project *Apis m* (PAm), the beekeepers could approach the directors with ideas for experiments or projects they wish to have conducted. The directors then could contact ANY individuals (not just bee researchers) who seem to be likely to be able

to conduct such research or projects and ask them to submit proposals on the topic. Beekeepers have endless ideas for research, but researchers do not hear about those ideas often enough.

There will be some maintenance expenses that must be paid to keep the commission operating, but that is true for all current CA agricultural commissions: apple, asparagus, avocado, blueberry, date, cut flower, forest products, grape rootstock improvement, kiwifruit, pepper, rice, sheep, strawberry, table grape, wheat, Lake County wine-grape, Lodi-Woodbridge wine-grape, Mendocino County wine and wine-grape, and Sonoma wine-grape. Nursery and sea urchin producers have passed enabling legislation and await industry referendums, as we do with our honey bees.

Assessments will be administered by someone other than the directors. Those funds are not held by the state and they are not allowed to be used for state general fund or any other, non-commission, expenses. Meeting expenses for the board members, a CDFA overseer, and public member must be covered; but that is about it. The rest of the funds will be devoted to what the beekeeper members of the board decide to do.

It is possible that the Apiary Commission might wish to join the California Commodity Committee. That nine-member committee keeps its membership informed of regulatory changes, research results, research needs, and what is happening at the national and international levels that affect “crop, livestock, and poultry producers.” Why not, “... and beekeepers.”?

An assessment of 10 cents per colony would extract only \$100 from an operation that placed 1,000 colonies into almonds. Hopefully, that is less than the

rental obtained from one colony. At 25 cents per colony, the 1,000 colony operator would part with \$250, less than the rental of two of the 1,000 colonies. If all one million plus colonies of honey bees in almonds generated their fair share of those assessments, there would be nearly \$100,000-250,000 to apply to projects chosen by beekeepers for funding.

This is an opportunity for ALL beekeepers bringing honey bees into California, for income production, to sponsor a beekeeper-conducted program that would steer significant funding directly into projects that the beekeepers believe would be of value to them. Whatever your inclination, be sure to vote. Don't let someone else decide for you!

How it Should be Done

Do you wonder about some of your colony management practices? Are they helping or hurting your bees? How are other beekeepers dealing with problems and managing their bees?

This information currently is being collected, sorted, grouped, analyzed and readied for beekeepers at one web site: <http://Beeinformed.org>. Dennis vanEngelsdorp is spearheading an effort to collect all the good, the bad, and the ugly, including survival statistics, etc. and match them to colony maintenance practices. Before long, the Bee Informed Partnership site will allow beekeepers to compare their practices with those of thousands of other beekeepers, as well as look at the success of those other practices. Beekeeping operations, from one in the backyard to tens of thousands used commercially, should be included in the data-base.

This compilation will be valuable only if there are very large numbers of responses to compare. If you can find a few minutes to complete the forms, electronically, at the bottom of the page at <http://Beeinformed.org>, you will be contributing to a huge data set and will help others, as well as yourself, to determine what are apt to be the best practices for managing your colonies.

Thank you for taking the time to share your management practices and results.

Another Bee Gut Study

It seems like there is quite a burst of interest in the intestinal microbes residing in the honey bee digestive system and the possible contributions they make to pollen digestion both in the gut and in stored pollens in the combs (bee bread).

Until recently, studies of bacteria and fungi have been limited by the fact that many of them are “fastidious” and will grow only on very special, chemically unique “media.” Also, much less attention has been paid to anaerobes, bacteria that cannot be grown in the presence of oxygen.

Now, however, many bacteria and fungi have been teased apart genetically and their DNA sequences recorded in giant databases. Even if the microbe turns out to be unknown, you can tell what its near relatives are (thank goodness for computer searches!).

Additionally, when you study the sequences you can determine what enzymes the microbes should be able to produce and what sorts of food they can digest, etc.

Thus, a number of “bee labs” are becoming involved in studies of these microbes and what exposure to antibiotics and pesticides may be doing to them.

Now, interest has spread to labs that previously were not bee labs. Dr. DeRisi’s lab in San Francisco is developing a microarray chip for all known diseases, and other associates, of honey bees and other arthropods. Most recently, there has been a not-too-well-advertised plea from a lab at Yale University, in West Haven, CT, for beekeepers to collect about 20 live bees from the outside edge of the brood rearing cluster, into two provided tubes of (safe-to-handle) preservative for each of four colonies, and send them to back to Yale for intestinal microbe identification. Again, this will be a genetic analysis, without growing microbes in the lab. Dr. Nancy Moran, lead investigator, wishes to receive samples from all over the U.S. and around the world, if possible. There is a questionnaire form on colony management to fill out for each colony, too.

If you wish to find out what microbes (of the eight groups they expect to find) are resident in your bees, go to the URL: <http://yale.edu/moran/bees.html>. Click “You want us to send you a sample kit?” and you can request a kit containing eight tubes of preservative, stickers to link the sample tubes to the data sheets, the forms, packing, and return shipping address.

How Many Frames of Bees?

For those of you who rent your colonies for crop pollination, one of the important considerations is how many frames of bees are in each colony population. This is especially important to almond growers who desire the largest bee populations possible

and often include a minimal population size in the pollination contract.

So, who determines what the colony population size is? Normally, the beekeeper should have a pretty good idea, but outside confirmation often is desired. Bee brokers and inspectors working for brokers, and bee inspectors from the ag commissioners' offices, are others who are frequently engaged in determining colony strengths.

Do all those inspectors use the same criteria when grading a colony? It did not appear to be the case. This might be expected with so many different inspectors, but within the ag commissioners association, you might have expected more continuity than there was. After many complaints, the beekeepers and the ag commissioners, spearheaded by Gary Caseri, got together in offices and in the field to formulate "Colony Strength Inspection Procedures," which the commissioners ratified at their May 5, 2011, agency meeting.

Paraphrasing from their document, the following are important:

1. Inspectors can use either a "cluster estimate" or "frame count" method. The former is preferable so that the bees are minimally disturbed. To facilitate the cluster estimations, Dr. Shannon Mueller has been working with the fore mentioned groups to have UC Cooperative Extension produce narrated slide sets and a video showing the examination procedure and examples of various cluster sizes.

2. By definition, "Active frames of bees shall mean two sides of a standard Hoffman frame of comb (8" X 17"), or equivalent comb area, at least 75% covered by bees at a density of four bees per square inch or more. Frames with less than 75%

coverage shall be combined and counted toward the standard active frame of bees. Non-standard frames shall be converted to the equivalency of the standard frame. Certification will be based on number of colonies [editor's insert: out of the 15 percent selected using appropriate methods to generate random samples] with listed frames of bees."

2. In the few cases in which square inches of brood are specified in contracts, such as alfalfa seed pollination, "Square inches of brood shall mean total area of comb of colony containing healthy brood in any stage of development, including eggs or larvae in open cells and capped larvae, pupae or imago stages. Certification will be based on the number of colonies with listed square inches of brood."

3. Inspectors should honor requests of beekeepers to be present during inspections, if possible. Likewise, beekeepers are asked to abide by the following, for colony inspections: "All colonies shall be available for inspection and not double stacked, banded, or presented in such a fashion as to prevent inspections."

With a bit of experience and a little luck, this procedure should go a long way to equalize colony strength determinations and to minimize disturbance to honey bee colonies during inspections.

Heat Stress and Heat Related Illness

It is difficult to believe, based on the weather this spring, that one should be concerned about becoming overheated outside. However, we cannot escape the heat forever.

Both UC and CA Department of Occupational Safety and Health contacted

me to let me know that their information on preventing and dealing with heat stress is available on the web. If you haven't brushed up on this topic in a while, a quick trip to one or the other of these sites would be worthwhile.

<http://safetyservices.ucdavis.edu/quick-links/monthly-safety-spotlight-1>

<http://www.dir.ca.gov/DOSH/HeatIllnessInfo.html>

This last site explains how to set up your required Injury and Illness Prevention Program (IIPP).

<http://www.dir.ca.gov/DOSH/etools/09-031/index.htm>

UC Davis Weed Day on July 14

Want to learn the latest coming from

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weed control research, including residual herbicides in almonds and walnuts, thermal soil disinfection, weed-risk assessment, and more? Visit <http://wric.ucdavis.edu> for more information about the July 14th meeting that begins with a 7:30 a.m. bus tour of terrestrial and aquatic weed control. Indoor lunch and presentations to follow until about 4:30 pm. Cost: \$65 for those who register early. After July 6, registration is \$90.

Sincerely,



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