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### Newsletter E-mailed to You

The newsletter is published bimonthly, in February, April, June, August, October and December. If you wish to have this newsletter sent directly to your e-mail address, when it is published, please follow the instructions below.

Send an e-mail addressed to **listproc@ucdavis.edu**. Leave the Subject line empty. In the body of your message put in the following: sub ucdavisbeenews <your first name (without these "brackets" around it)> <your last name>. On the next line, insert two hyphens, not underscores (underlines). If I were subscribing it would be:

**sub ucdavisbeenews Eric Mussen**

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The hyphens are there to tell the subscription software on the server not to be confused by any following information that occurs, such as a "signature frame" (or signature block, as I call it).

If you wish to be removed from the list, then you do the same thing, but instead of **sub**, you use **unsub** or **signoff**, then the name of the list and your first and last names followed on the next line by hyphens.

### I Can't Keep Up!

When I was hired into my current position I was pretty much up to date on many aspects of beekeeping. To remain up to date, I visited the library quite often and read the various journals that carried many of the honey bee related papers. Not many beekeepers subscribed to those journals, so I shared the information in my newsletters, as I still do.

As honey bee research evolved from classical types of studies to more focused, molecular studies, the honey bee articles no longer were confined to "bee Journals" and became harder to find. With the development of the vast Internet community,

it has become much easier to keep abreast of recent findings in science, if they catch the attention of the media. Thus, I am copied on e-mail messages from all sorts of individuals who have spent an awful lot of time browsing the Web or have set up something similar to “Google Alerts” that send articles pertaining to their areas of interest directly to them when the news hits the system. Two great sources of up to date information that hit my e-mail are “Catch the Buzz” from Kim Flottum at Bee Culture and “Apitrack” from Arturo Hatrick in Argentina. You can subscribe to the Apitrack newsletter (in English) at Apitrack.com.

As an example, I have been asked about using coconut oil for *Varroa* control. What did I know about that? Nothing! However, if you look on the Web, you can find articles about that subject and about the company that intends to formulate a product to sell to beekeepers. I will be taking a look at how well coconut oil works this coming year.

Other examples include the considerably increased amount of research funding that became available to bee researchers when the world became familiar with CCD. Besides the old stand-bys, like the National Honey Board and many state beekeeping associations, new funding was discovered in the federal government (at least temporarily, i.e. the CAP grant overseen by Keith Delaplane), the Foundation for the Protection of Honey Bees provided funding, PAm was set up and is functioning well, Häagen Dazs and Burt’s Bees made significant contributions, and we still are receiving valuable donations from citizens and businesses that wish to continue our efforts to keep our honey bees healthy.

So, what do we old, obsolete specialists have to offer, now that

information is being generated faster than we can absorb it? We still can offer analyses based on years of background knowledge and field experience. We should be able to determine when something sounds too good to be true. We should be able to foresee unintended consequences of applying certain management practices to honey bee colonies. We should be able to review proposals for scientific studies and determine if the experimental designs are feasible and will result in data that is applicable to the question of interest. And, we still should be disseminating accurate information about honey bees and honey bee health.

I have mentioned this, before, but it bears repeating. All of us are more likely to be dealing more and more with various media (TV, radio, commodity publications, extension publications and Web information disseminators (news networks, blogs, etc.)). Usually, our messages will be projected accurately, as we desire. Occasionally, a message will come out wrong. The best we can do, then, is to disseminate more information that attempts to straighten out the record.

There have been a number of bee-keeping documentaries released over the last year or two. Our researchers and beekeepers are doing a great job of presenting information to the general public and should be applauded for it. Keep up the good work!

### Almond Visitation Hours

A concern each year, when considering the almond pollination season, is how many honey bee visitation hours occurred during bloom. We had successive record crops until this year, when the crop was down just a little. However, records from the Nickels Soil Lab weather station in

the Arbuckle area of Colusa County suggest that we may be a bit too concerned about foul weather and pollination. CE Farm Advisor John Edstrom reports in the March 2009 Orchard Newsletter that flight hours for 2005 were 130, for 2007 were 140, for 2008 were 175, but for 2009 were only 92.

Defined as “the number of hours above 55 degrees when wind is less than 15 mph, given a sufficient level of sunlight without rainfall,” flight hours still were about 9 hours a day over a ten day bloom period.

I believe that if the tree varieties overlap well in bloom, the bees usually have moved the pollen around in the morning and early afternoon on good flight days. That probably requires only about four hours a day. It will have to take prolonged, flight inhibiting weather before lack of flight will reduce the crop, significantly.

However, that type of poor weather also would interfere, significantly, with fertilization and nut set, but it would not be the fault of the bees.

### Xerces Site Terrific

The Xerces Society, known for its efforts to save endangered butterflies, then endangered invertebrates, and now focusing on pollinators, has just opened a new page on Pollinator Conservation. While the major emphasis is on non-*Apis* bees, honey bees are included and given credit for their use in commercial crop pollination.

There is information on many of the native pollinators across the country, by region, as well as their preferred habitats and food plants. Honey bees will benefit from just about all the suggestions for making an

area more pollinator friendly, and beekeepers will find that reading about honey bee’s relatives is much more interesting than they might expect.

Check out the information at:  
[www.xerces.org/pollinator-conservation/](http://www.xerces.org/pollinator-conservation/).

### Appropriate Handling of Fumigants

Beekeepers in California currently have available to them three formulations of fumigants for reducing the levels of *Varroa destructor* in their colonies: Mite Away II<sup>®</sup>, Api-Life VAR<sup>®</sup>, and Apiguard<sup>®</sup>. As is always the case, anyone applying the materials must follow the instructions on the labels. Mite Away II and Api-Life Var require a specified type of respirator. Chemical resistant gloves and goggles (face shield or safety glasses) are required for all three.

I did not see a Reentry Interval (REI) for Api-Life VAR, but no one is supposed to go into the Apiguard-treated hives for 48 hours. The Mite Away II label prohibits entry in the treated apiary the whole 21 day treatment period, without wearing the approved respirator. How do people know not to go into the hives? You are supposed to post a warning sign stating that the colonies are under treatment and to stay out until the appropriate time.

The label doesn’t have instructions for moving the formulated products from apiary to apiary. The label doesn’t have terribly specific instructions for handling empty containers when the pesticides are used up. That is where the state regulations take over. Please move on to the article titled Handling Pesticides to see about those concerns.

So, what about the buckets that held the individually sealed pads of Mite Away II? It would seem that the bucket, itself, is clean. At worst, it might have had a little formic acid on it, but that would have escaped into the atmosphere very shortly after exposure to air. So, can't you use the empty bucket to haul around the sticks you use to place under the pads at the next apiary? The answer is, "NO." That is a used pesticide container and it should be treated just like one that held a highly toxic material.

### Pollination Contacts

Every year, beekeepers and growers contact me asking where they can find information on beekeepers who rent colonies for pollination and on growers who have acres of crops that require pollination.

The Almond Board of California has had beekeeper information on the Web for many years. Go to their main page and use the Search window for "beekeepers" or there is a small box to check, on a list down the left hand side of the page, which says beekeepers.

A second list is being compiled and has many entries, already: The Pollination Home Page. The url is: (no www) [pollinator.com/Pollination\\_Beekeepers/polbkprs.htm](http://pollinator.com/Pollination_Beekeepers/polbkprs.htm) (there are no spaces in that url). When you arrive at the page, you will have a choice of which state to view. Each beekeeper listing includes the following: name of business; name of person in charge; e-mail or Web page; mailing address; phone number; number of hives available; where the beekeepers are willing to take the bees; and the crops for which the beekeepers are willing to provide colonies.

This site is maintained by David Green, retired beekeeper, and entries from across the country are posted for free (although donations are cheerfully accepted). David can be reached directly at: "David Green" <[Pollinator@sc.rr.com](mailto:Pollinator@sc.rr.com)>.

Unfortunately, I am not aware of a site that has a list of growers who are in need of honey bee colonies for pollination. Growers often contact brokers, who are listed with the beekeepers, when they are looking for bees. Or, they put advertisements in local newspapers.

### Specialized UCD Courses

Susan Cobey is offering four special courses to promote stock improvement in the coming spring. The first two are workshops on the Art of Queen Rearing. The first day, Wednesday, March 31<sup>st</sup>, 2010, is dedicated to the details of rearing quality queens using either the queenless or queenright cell building system. Following a discussion of the topics, participants will have an opportunity to try (hands on) the techniques. Bring a bee veil. The following day, Thursday, April 1<sup>st</sup>, there is an optional tour to a number of northern California queen rearing operations to see how the pros do it.

The registration deadline for the two queen rearing workshops is Friday, February 20<sup>th</sup>, 2010. The registration fee is \$200 for the first day and an additional \$50 if you wish to visit the commercial operations the next day. Pre-registration can be done on the Web at (no www) [entomology.ucdavis.edu/home.cfm](http://entomology.ucdavis.edu/home.cfm). Or, Susan can be contacted, directly, at 530-754-9390. The information is the same for the second session, which begins April 7<sup>th</sup>, 2010. (Continued on Page 6.)

# 2010 4-H Honey Bee Essay Contest

Sponsored by The Foundation for the Preservation of Honey Bees, Inc.

Each year the Foundation sponsors an essay writing contest for active (fees paid) members of 4-H clubs across the country. There are cash prizes for the national winners: 1<sup>st</sup> Place - \$750.00; 2<sup>nd</sup> Place - \$500.00; 3<sup>rd</sup> Place - \$250.00. National and state winners receive a book about honey bees, beekeeping, or honey.

**Topic – “Is My Community Honey Bee-Friendly?”** Honey bees and other pollinators have been in the news, lately. Many beekeepers have experienced colony losses to the yet-unexplained Colony Collapse Disorder (CCD). These unexplained losses have caused some people to wonder: What can I do to help? For this essay, you should survey your community to see what is being done, or could be done, to help honey bees. Perhaps there are classes to attract new beekeepers – or laws that prohibit beekeeping. Does your community allow roadsides and open land to grow up in blooming plants in the spring – or not? Are there resources to help home gardeners make bee-friendly choices? When insecticides are required for pests (for example, mosquito control), are the insecticides chosen or applied with bee protection in mind? Include your state in your survey if there is some reason: for example, your state may have declared the honey bee your state insect, or your state highway department may have a wildflower seeding program.

**Scope of Research –** This essential judging criterion accounts for 40% of the score. The number of sources, the authority of the sources, and the variety of the sources all are evaluated. Personal interviews with beekeepers and others familiar with the subject are valued sources of information and should be documented. Sources that are not cited in the end notes should be listed in a “Resources” or “Bibliography” list. **Note that in the US, honey bee is spelled properly as two words, despite what the spell checkers and dictionaries may tell you.**

Contest Rules:

1. Contest is open only to active 4-H Club members. Previous national winners, at any level, are ineligible. Former state winners are eligible to re-enter.
2. Format should be typewritten or computer-generated, double-spaced, 12-point Times or similar (serif) type style, on one side of white paper following standard manuscript format.
3. Write on designated subject only.
4. All factual statements must be referenced with bibliographical-style endnotes.
5. The essay must contain 750 to 1,000 words. This does not include the endnotes, the bibliography, references, or essayist’s biographical sketch (which should be on a separate page).
6. Essays will be judged on (a) scope of research – 40%; (b) accuracy – 30%; (c) creativity – 10%; (d) conciseness – 10%; and (e) logical development of the topic – 10%.
7. A brief biographical sketch of the essayist, including date of birth, gender, complete mailing address, and telephone number, must accompany the essay.
8. Individual essays for the State of California should be mailed (“hard copy”) in time to be received on or before February 12, 2010. Address the envelope to: Dr. Eric Mussen, Entomology Department, University of California, One Shields Avenue, Davis, CA 95616.

The third workshop is dedicated to Instrumental Insemination & Bee Breeding. The content is focused on detailed instruction and hands on practice in semen collection and artificial insemination of queen honey bees. Further, instruction is included for obtaining synchronized drones and virgin queens, holding those bees for future use, and providing critical genetic information required for conducting a successful bee breeding program.

This is a three day workshop, scheduled for Wednesday, April 14<sup>th</sup>, 2010, through Friday, April 16<sup>th</sup>. There is an expectation that participants will be competent queen rearers. They will bring their own insemination instruments, but microscopes will be available if necessary.

Each participant will receive individual attention, until the fundamentals are mastered, thus class enrollment is quite limited. The registration for this workshop is \$400 and the pre-registration deadline is Saturday, March 20<sup>th</sup>, 2010. See registration particulars under the queen rearing workshop.

The fourth, and final, workshop is called the Advanced Workshop on Artificial Insemination. It is a follow up to the two previous courses, after the participants have had a year or two of experience using the techniques. Obviously, not everything goes right following the adoption of new techniques, so this workshop provides an opportunity to discuss the kinks and see what can be done to remedy them, both in the insemination room and in the field.

Again, the participants should bring their insemination instruments and a bee veil. Microscopes will be available if required. Registration will be \$400 for this two day workshop scheduled for Wednesday

and Thursday, April 21<sup>st</sup> and 22<sup>nd</sup>, 2010. Pre-registration must be submitted before March 20<sup>th</sup>, 2010. See particulars for pre-registration under the queen rearing workshops.

### Handling Pesticides

In order to make pesticide recommendations to beekeepers and the general public, I had to pass a pesticide use and safety test. I also have to acquire an adequate number of continuing education hours every two years to remain certified. Therefore, it is easy for me to forget that everyone else isn't as familiar with the regulations concerning pesticide use in California. A recent visit to a beekeepers operation by a county enforcement agent suggests there are some things that you should remember.

All products, labeled as pesticides in California, have to carry a signal word describing the threat of the pesticide. The three words, in increasing severity, are Caution, Warning, and Danger. Along with those signal words are specific mandates for proper use, proper PPE (personal protective equipment), and storage and disposal instructions.

Products with the signal word Caution usually can be used around the home or apiary, with due caution. When the product is used up, usually the container can be discarded in the trash.

Things change, considerably, with the words Warning or Danger. First, the products are supposed to be stored behind lock and key, not just sitting out in the open. Second, depending upon the amount of product involved, the vehicle carrying the product is supposed to have hazardous cargo

placards on it. The product is supposed to be placed in a locked, spill-proof container that is not in the passenger compartment of the vehicle. This sounds reasonable, as does the law that expressly prohibits using any emptied pesticide container, with or without the label still attached, for ANY other purpose, especially as a container for food or water.

What does this mean in practice? It means that you have to read very thoroughly the labels on our *Varroa destructor* treatment products. What protective equipment do you have to wear when applying the treatments? How can you transport them legally? How do you dispose of the empty containers? This last one is a biggie. Does the label state that the empty wrappers and containers can be tossed in the trash? If not, keep this in mind. Used pesticide containers must be triple rinsed and stored in a locked facility until they can be taken to a Class III landfill. This makes sense when the rinsate can be part of the water used to mix up the final formulation before a spray application. But, what do you do with the rinsate from a dry container, such as the tin dishes left from an Apiguard<sup>®</sup> treatment?

Here is the way it was described by a representative from DPR: Title 3 of the California Code of Regulations (3CCR) section 6682 - Transportation states: "(a) Pesticide shall not be transported in the same compartment with persons, food or feed; (b) Pesticide containers shall be secured to vehicles during transportation in a manner that will prevent spillage onto the vehicle or off the vehicle. Paper, cardboard, and similar containers shall be covered when necessary to protect them from moisture."

DPR's Pesticide Use Enforcement Program Standards Compendium, Volume 8 -

Guidelines for Interpreting Pesticide Laws, Regulations, and Labeling, Chapter 1, Section 1.16 Vehicles - Pesticide in Passenger Compartment interprets 3CCR section 6682 (see attachment) as follows: "This regulation section was not intended to apply to persons who fall under the jurisdiction of commercial transportation regulations, although they may be transporting pesticides, food, and feed in the same "compartment" (cargo box)."

"This regulation was intended to apply only to persons engaged in pest control businesses (structural or agricultural), growers, and other users who may transport opened or sealed containers to and from an application site. Section 6682 was enacted to provide a reasonable level of protection from physical (dermal) contamination of people and commodities which, at times, are transported to or from a use site together with pesticide containers in the same vehicle. It was never intended to address inhalation exposure."

"When a van or SUV-type vehicle is being used, creating separation through utilization of a mounted panel or baffle that substantially separates passengers and cargo areas meets the intent of this regulation. An airtight or even leak proof separation is not required to meet this standard. A separate compartment may also be created through the use of a container, such as a cargo box or cabinet, secured to the vehicle."

Yes, one of our beekeepers has discussed this, nose to nose, with a field representative from the office of an agricultural commissioner. No fines were imposed, but a cease and desist order was written up.

How about disposal of the "remains" following treatments with these fumigants?

Despite the label instructions to wrap up the residual materials (such as the aluminum dishes with Apiguard or the spent pads of Mite Away II) and put them into the trash, our beekeeper was told that the residuals were toxic waste and had to be disposed of in a similar manner to the empty pesticide containers. He was also told that letting the Mite Away II pads “air out” for a couple days in the field before discarding them was releasing toxins into the air and was illegal.

More to follow in February.

Sincerely,

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