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Help Save the Honeybees Fund

On Wednesday, October 23rd, General Mills kicked off its campaign to Help Save the Honeybees. It was an auspicious beginning, with live TV interviews by yours truly and Jerry Stroope, President of the American Honey Producers' Association, beamed all over the country via satellite.

As manufacturer of Honey Nut Cheerios, General Mills decided to raise the conscious level of the general public by describing the alarming loss of honey bee colonies, particularly as the losses related to parasitic mites. The plan was to catch the attention of viewers by predicting substantial increases in prices or absences of honey bee pollinated crops across the U.S.

Members of the audience were told to clip the picture of the honey bee from the front of the

Honey Nut Cheerios box and send it back to the manufacturer. For each cut out bee returned to General Mills, the manufacturer would donate \$0.25, up to a maximum of \$100,000, for each bee returned. Unfortunately, no specific return address was given - only a toll free telephone number: 1-800-362-2006.

I'll save you the call. The mailing address is: Save the Honey-bees, P.O. Box 5450, Minneapolis, MN 55460-5450. Obviously, there has to be a greater publicity effort than the one in which I participated, if we are going to get 400,000 bees returned to Minneapolis by January 31, 1997. How about sending a note to school with your child, grand-child, or the neighbor's student asking the school to support the effort?

What do we get out of this? I was told, "Recognition as the fore-most honey bee research facility."

That may be questionable when you see Kim Fondrk opening a hive of bees in front of a six foot tall box of Honey Nut Cheerios. Also, UC Davis will share the funding with Michigan State University and the University of Minnesota, the first time around.

I hope that this effort is advertised a lot better in the future than it is currently, or no one will be sending bee cutouts anywhere.

If you wish to receive an "information packet" from Help Save the Honeybee Fund, call the 800 number and leave your name and address at the voice mail prompt.

Pollination Under Covers

Producers of vine crops around the world are experimenting with growing melons and related cucurbits under loose layers of fabric. The fabric is used to physically exclude plant sucking bugs, that vector virus diseases, and flies whose maggots burrow into the fruits.

These crops require honey bee pollination. In most cases, the fabric is rolled back or removed when the plants bloom. This allows pollination, but also exposes the plants to the pest insects. A crop like zucchini squash can mature in 5-10 days after pollination, so the pest insects are not of too much concern. Cantaloupes need 30-45 days to reach maturity, so the pest insects can have a much greater impact.

What if the covers were not opened? Could honey bees be enticed to forage under the fabric? Two French researchers studied this question with cantaloupes grown in Africa. The pests to avoid were cucurbit fruit flies. Their maggots develop in the fruit, so the flies had to be excluded from bloom time to fruit harvest.

Cantaloupes were planted in a single row. Fifty plants were covered with a medium-weight spunbonded polypropylene fabric, for a length of about 80 feet. The cover was arranged like a tunnel two feet high with the edges buried in the soil. There were three experimental treatments: 1. covers opened at bloom, 2. one end of a 40 foot tunnel opened at bloom, 3. second entrance to honey bee colony (AHBs) opened into closed 80 foot tunnels.

Foraging under closed covers started as soon as the entrances were opened. At first some foragers appeared to spend their time trying to get out of the tunnels, but they returned to the hive at night. Eventually, about 2.5 honey bees per 100 blossoms foraged in the tunnels. Tunnels with an end open had only about 1.0 honey bee per 100 blossoms. Open pollinated had about 2.2 honey bees per 100 blossoms, but the flowers were also visited by other pollinating bees and flies.

Fruit yields were as follows: closed tunnels with bees = 2.9 cantaloupes per plant; tunnels with one end open = 1.8 cantaloupes per

plant (evenly distributed over the 40 feet); and open pollinated = 1.2 cantaloupes per plant. The open pollinated fruit were reduced to 40% commercial grade by fruit fly damage.

Interestingly, the fruit flies did not venture more than 15 feet inside the tunnels open only at one end, but honey bees traveled throughout.

These results suggest that our melon growers might wish to try leaving the covers over the plants, even during pollination. With special hive entrances leading inside the covers, honey bees forage fairly well in the tunnels. For more details, refer to the article by Vaissiere and Froissart in the Journal of Economic Entomology 89(5):1213-1222 (1996).

Phasing In or Out?

Historically, beekeeping and farming operations were likely to be passed down in the family, generation to generation. Recently, beekeeping and farming have failed to enthuse the younger generations enough to keep that tradition going. Older owner/ operators are approaching (or have passed), the age of expected retirement without any idea of who next will run the operation. In a number of cases, the current operator would have sold out long ago, but the value of the operation is not adequate to fund retirement, so the operator is forced to continue.

Up to this point in time, word-of-mouth was about the only way that one could find out about such solicitations. Some operators, wishing to leave the

bee business, advertised in the "bee" publications, but results were not forthcoming. So, we have decided to try a referral system, through UC Davis, for California operators who wish to phase into or out of beekeeping.

Called the "UC Farming Apprenticeship Program", this effort will be directed toward developing a data base of beekeepers who are looking for more helpers for their operation or for someone who wishes to "learn the ropes" and phase into ownership of an operation, as the established owner phases out.

Since UC is involved in the program, opportunities for "intern-ships" will be posted on written and electronic bulletin boards likely to be read by college students. However, anyone interested in working with a beekeeper can use this service.

The contact person for the UC Farming Apprenticeship Program is Nancy Tibbits, Coordinator of the Internships and Career Center at UC Davis. She can be reached at (916) 752-2861 or at nrtibbits@ucdavis.edu for e-mail. Her mailing address is Nancy Tibbits, ICC, University of California, Davis, CA 95616.

Nancy will handle your contact with as much confidentiality as you request, from having her screen all potential candidates before giving your name and number only to a single candidate, to making your desires known simultaneously on the many campuses with which she cooperates. At the moment, this service is provided free as a perk to students. (Actually,

my son is a current UCD student and I'm sure that I'm paying for all these "free" services.)

WSBA Tidbits

As is always the case, I was able to pick up some interesting bits of information when I attended the Washington State Beekeepers' Association annual convention.

Western states seem to be plagued with yellowjackets. An enterprising beekeeper noted that service clubs now purchase their "hard stuff" in plastic bottles. The square-sided bottles are packaged in a nice, divided box. By drilling a 1 3/8" hole in the hive cover, and 3/64 or 1/16" holes in the bottle cap (depending on viscosity of syrup), those left over bottles make good bee feeders. By leaving the bottle cover intact, drilling two holes in the sides of the bottle to fit a length of one inch diameter PVC pipe that has a slot cut open along it's middle, and adding a bait, the bottle becomes a highly effective wasp trap. The wasps enter the traps through the ends of the PVC tube, are released into the bottle, but can't find the slot to get back out. Besides they area likely to drown in the two cups of sugar, two cups of water and three or four tablespoons of vinegar that are placed in the traps. The older the solution gets, the more wasps it attracts. The vinegar is supposed to keep bees and ants away from the trap.

Although most wasp traps work best in the late summer and fall, when natural prey disappears from wasps' diets,

this bait is said to attract a great many spring "queens" before they get their nests going, thus making a large dent in the local population that lasts all year.

Time to improve your first aid kit! Apparently, word has spread through WA schools that a Mennen Antiperspirant Lady Speed Stick is just the thing to alleviate the pain of honey bee and wasp stings. The positive effect seems to be linked to the anti-perspirant, because a Speed Stick lacking the chemical doesn't seem to help. According to a beekeeper who has used the product, it helps immediately after the sting or up to a half hour later. He prefers the "unscented" for his treat-ments.

Be careful where you spill Mann Lake Ltd's product, Honey Robber. The deodorized honey bee repellent appears to be extremely attractive to bears. They wallow all over the ground at the site of a spill. I guess you wouldn't want to try it as a mosquito repellent on a camping trip to the Sierras.

A beekeeper reported that a 30% annual turnover in queens is to be expected, even if colonies are requeened each year. He passed on advice for speeding up queen finding. In the morning, the queen is most likely to be in the upper brood box. Later in the day, she goes down toward the bottom of the brood nest, into the lower box.

Calming Defensive Bees

In the June, 1996, issue of the Journal of Economic Entomology (Vol. 89, No. 3) Dr. Anita Collins and her co-workers describe attempts to interrupt the stinging behavior of defensive bees by spraying insect repellents in the air.

Four repellents (diethyl-meta-toluamide ((DEET)), 2-ethyl-1-3-hexanediol, dimethyl phthlate and benzaldehyde) were diluted in mineral oil to 15% concentration by volume. Menthol was dissolved in mineral oil to 15% by weight. All formulations were put into pressurized aerosol spray cans.

After disturbing colonies of European and Africanized honey bees, experimenters walked 16 feet from the hives and sprayed the repellents into the air around them. The tests were repeated for

a number of days. Interestingly, although AHBs were always more defensive than EHBs, the numbers of stinging AHBs declined day by day, while the numbers of EHBs increased with daily provocation.

All the repellents helped disperse the defensive bees, beginning in seconds after spraying. DEET did the best job, reducing numbers of bees to between 11 and 21% of their original numbers. Benzaldehyde was a very close second. Menthol did real well on two test days, but only reduced defenders by 50% on the first day of testing. Just spraying the bees with mineral oil sent 30 to 70% of the bees home.

I believe what researchers in the USDA/ARS Carl Hayden Bee Research Center are working on formulations of repellents that will be marketed by commercial companies.

Pesticides on the Web

The California Department of Pesticide Regulation (PDR) has opened up a web site providing web surfers with an opportunity to inspect some useful databases. Most people probably will be interested in the "product label" file. It contains information on more than 30,000 pesticide products that are or have been licensed for sale and use in California. The database indexes information from the product label, including the product name, active ingredients, registration number, formulation, manufacturer, where it can be used, and target pests. I wonder if it carries honey bee toxicity warnings?

If you are chemically oriented, there is a chemical dictionary that contains basic information on chemicals contained as either active or inert ingredients in pesticide products registered in California. The database contains pesticide common, technical, and trade names as well as synonyms.

You can look up an electronic version of the Food and Agriculture Code to find pesticide laws and regulations. An index is included to reduce your search time. And, if all else fails, the "people locator" will lead you to names, telephone numbers, locations and e-mail addresses of DPR employees - take a look at <http://www.cdpr.ca.gov/>.

20 Year Review (Cont.)

1988 - I took a unscheduled work break to have a ruptured appendix

removed. Changes in "citrus/bee regulations" more favorable to growers than beekeepers. Section 18 passed for using menthol in hives. Serious attempt made to require labels on honey jars warning consumers not to feed honey to children less than a year old (failed). A federal "negotiated rule" on Varroa mite described quarantine areas, explained certification and treatment for queens and packaged bees. Temporarily a "Qualified Applicators Certificate" required for using menthol or Apistan[®] products. Honey bee repellents and bee poisoning baits being tested by USDA/ARS personnel.

1989 - Debate continued: How much effect do tracheal mites have on overwintering mortality? The Apiary Inspectors of America reported on a survey conducted to determine the impact of Varroa on colonies. Responses were extremely variable, but were more similar in similar climatic regions. Following a comment period, USDA/APHIS decided not to set up or become involved in any kind of national regulatory program for Varroa mites. Federal law required Universal Product Code (UPC - we call them "bar codes") on..."each shipping container" of honey. An opportunity was announced to be listed in the "California Agricultural Export Directory." An Oregon survey showed that colony losses over winter were 10.7% for those who treated for tracheal mites and 31.9% for those who did not. Federal Extension Apiculturist, Dr. James Tew, published the first of many fact sheets on bees, pollination, and AHBs. Dr. Kenneth Farrell, then UC Vice President of Agriculture,

spoke to us of the future:
"Clearly the status quo will not suffice." Since that time we have lost a third of our support funds and about a third of our personnel through early retirements. I reported on yet another study that demonstrated that "fat bees" winter better because of their higher levels of stored fats, proteins, and carbohydrates compared to summer bees. Get out that frozen pollen that you trapped in the spring and build a population of fat bees for this winter. An example cost of production sheet was prepared in Canada and put into the newsletter for comparing your costs to the Canadian average. Drenching bees in soapy water was reported as a way to "control" large numbers of flying, stinging

honey bees. Varroa mites show up for real in California with three resident populations and 17 quarantine interceptions. CDFA personnel still needed to supervise the use of Apistan[®] strips by beekeepers. Researchers reach conflicting conclusions on whether or not AHBs and EHBs are hybridizing in Mexico, using the same data.

Sincerely,

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