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CA Regulatory Activities

Recently, I was contacted by a California beekeeper who was dissatisfied with the lack of response he was receiving from a county agricultural commissioner when he reported that his neighbors were surrounding him with American foulbrood. Additionally, samples of the diseased larvae sent to the USDA/ARS diagnostic lab in Beltsville turned out to be tetracycline resistant. The beekeeper contacted me to see what could be done.

The following is the text of a letter that I received in response to my question about this lack of service.

"As you know, the Department administered a bee management program pursuant to the "Apiary Protection Act" (Food and Agricultural Code, Division 13, Chapter 1). The program was funded via a three-cent per colony assessment, which terminated

on July 1, 1992 by a sunset provision in the law. The Department had to terminate the apiary health aspects of the program. Agricultural commissioners still provide pesticide notification, colony strength certification and interstate movement certification to meet the requirements of other states. Fees are charged for the latter services.

The Apiary Protection Act is still in the Code. Funding is essential for any renewed program activity. If the California Beekeepers

Association and other industry organizations wish to recreate a bee health program here in California, the Department will be pleased to work with industry leaders and the agricultural commissioners to design the program and determine the costs. Then, were the industry to sponsor legislation to reestablish a colony assessment or some other means of generating funding, a program could be implemented to meet the needs."

So, related to AFB, it looks like you are on your own!

Apiculture Vacancies

One of the problems facing professors of apiculture is placement of students after they graduate. For a change, there are currently at least two positions available.

1. Assistant/Associate Professor in Apiculture at North Carolina State University. In this case the appointment will be 70% Extension and 30% Research. Applications will be taken until September 30, 2002. Submit a letter containing Extension and Research goals, plus the names of three references, to: Dr. James Harper, Head; Department of Entomology, Box 7613, North Carolina State University, Raleigh, NC 27695-7613. For particulars, call (919)515-2746 or email Dr. Harper at: james_harper@ncsu.edu.

2. Postdoctoral Research Associate in Apiculture at the Texas Agricultural Experiment Station in Weslaco. This individual is going to be involved with determining the "crossing over" rates of bees between varieties of almonds in commercial orchards. The samples will be collected in California and analyzed in

Texas. The candidate should have a PhD in entomology, genetics or botany and have knowledge of isoelectric focusing techniques. Submit a letter of application with your resumé and request that three letters of recommendation be sent to: Dr. Jose Amador, Center Director; Texas Agricultural Experiment Station, 2415 East Highway 83, Weslaco, TX 78596.

Research Extracts

It has been a long time since I shared some of the findings from "bee journals" not routinely read by beekeepers. I have to keep the information brief, so as not to offend the publishers. I have enclosed the references for those who wish to seek out the details.

Live *Varroa jacobsoni* Fallen from Honey Bee Colonies by Thomas Webster, et al. J. Econ. Ent. 93(6): 1596-1601 (2000).

Most of the falling mites in a colony hit the bottom board alive, especially along the back and sides of the hive. This holds even with acaricide treatments. In the hot summer, the proportion of live mites is lower. The authors suggest to use a barrier, even with screens, to prevent the fallen mites from getting back on the bees.

Inheritance of Resistance to *Acarapis woodi* in First-Generation Crosses of Honey Bees by Robert Danka and Jos^o Villa. J. Econ. Ent. 93(6): 1602-1605 (2000).

When using a tracheal mite resistant strain of honey bees either as breeder queens or as drone producers, the resistant trait is dominant enough to confer protection to hybrids from known susceptible stocks. So, keep putting them out there and the tracheal mite problem should diminish.

Effects of comb age on honey bee colony growth and brood survivorship by Jennifer Berry and Keith Delaplane. J. Apic. Res. 40(1): 3-8 (2001).

For three years differences were measured between populations of bees raised in old, dark combs *versus* those raised in brand new combs. Colonies raised on new combs usually had larger brood areas, more sealed brood, and higher emerging bee weight. Brood survivorship was higher in the old combs. There were no differences in final bee population sizes.

The enigmatic Cape honey Bee, *Apis mellifera capensis* by Randall Hepburn. Bee World 82(4): 181-191 (2001).

Cape bees in particular, but other African honey bees as well, tend to have populations where laying workers are fairly common in queenless **and** queenright colonies. Offspring of laying workers may be male or female. Some of these laying workers produce more or better queen pheromone than the real queen, so the queen is lost. So is the colony, with time. Beekeepers have moved capensis colonies into areas originally inhabited only by our nemesis, *A. m. scutellata*. The commercial beekeepers there are really unhappy, because capensis pseudo-queens are getting into their boxes and putting their scutellata colonies out of business.

Honey bee winter mortality in France in 1999 and 2000 by J-P Faucon *et al.* Bee World 83(1): 14-23 (2002).

French beekeepers have noticed much more severe winter losses over the last few years, so studies were conducted to find a possible cause. Pesticide residue tests demonstrated five organochlorides, 14 organophosphates, seven synthetic pyrethroids, and nine other agrochemicals. Disease and parasite surveys demonstrated 40% *Varroa* infestations, 36% chalkbrood, 33% European foulbrood, 31% *Nosema*, 30% AFB, 19% paralysis virus, and

16% sacbrood. There weren't enough tracheal mites to count.

Honey bee colony mortality and productivity with single and dual infestation of parasitic mite species by Danielle Downey and Mark Winston. *Apidologie* 32(6): 567-575.

After 16 months of observations, dually infested colonies were mostly dead, *Varroa* infested colonies were on their way out, and those infested solely with tracheal mites were similar to non-infested colonies.

Using inert dusts to detect and assess varroa infestations in honey bee colonies by P. Macedo *et al.* *J. Apicul. Res.* 40(1-2): 3-7 (2002).

A number of powders were tested for knocking *Varroa* off adult bees in a jar. Powdered sugar was among the most efficacious, was non-toxic to bees and gave results as reliable as "ether roll" tests.

Is contact colony treatment with antibiotics an effective control for European foulbrood? by Helen Thompson and Michael Brown. *Bee World* 8(3): 130-138.

Statistical data was analyzed and specific bee-

keepers interviewed. One of the researchers' conclusions should be remembered: "From the above it can be seen that the removal of contact colony treatment has no apparent effect on the recurrence of disease in apiaries. The use of an antibiotic suppresses the clinical signs of disease during the year, but the levels of disease are at least as high as in untreated apiaries in following years."

Effect of shaking honey bee colonies affected by American foulbrood on *Paenibacillus larvae larvae* spore loads by M.L. Del Hoyo *et al.* *J. Apicul. Res.* 40(2) 65-69 (2001).

Since time immemorial beekeepers have shaken adult colony populations onto new frames to rid a colony of AFB. This study compared spore loads in honey and bees from diseased colonies shaken directly onto the new frames versus shaken on the ground in front of the entrance to the new hive.

The honey bees from diseased colonies carried more spores than the honey. After shaking, by either method, the spore count was lower and continued to drop in the adult bees. Spores in the new honey were down, too. However, the new colonies were far from spore-free, yet

no new disease outbreaks occurred for five months.

Fire Department Breakfast

Since September is "Honey Month," the National Honey Board decided to try to get some positive honey bee and honey exposure through having volunteers provide a **Honey and Biscuits** benefit breakfast for their Volunteer Fire Department. It doesn't HAVE to be done in September, but that would be nice.

To help you out in this endeavor, the Honey Board has spent a great deal of time preparing a 20-page "Kit" for that purpose. It includes lots of detailed planning information (supplies, menu - how many eggs and sausages per 100 people, etc.). In order to advertise the event, the Kit includes a CD that can be used to print announcements, make up newspaper ads, banners, etc. If you are one of the first 75 volunteers to commit to doing this, the Honey Board will donate \$250 to help defray some of the upfront costs. You are supposed to charge admission to the general public and make a profit for the fire fighters. Simply email: breakfast@nhb.org or call 1-800-682-2337 to sign up.

Almonds - Five Year Stats

Year	Acres	Production (million #'s)
1998	460,000	520
1999	480,000	833
2000	500,000	703
2001	525,000	830
2002	530,000	980

Our bees must be doing something right!

Honey Bees on "Wild TV"

The following information was sent to me from Matthew Shepherd, Pollinator Program Director for the Xerces Society (best known for trying to save endangered butterflies). The Society has a real interest in pollinators (some are butterflies), so they have developed a four-part program on pollinators for PBS television, the third half hour of which is devoted to honey bees.

"I thought people might like to know that there will be a feature on honey bees and the problems they face on "Wild TV." It will be broadcast on PBS in September. Since Wild TV is targeted for younger people, expect some fun and games. The segment includes a honey bee rap and bee swarm holding by Mace Vaughan, who now works for Xerces Society in Oregon, but was booked for this filming while he was still living in New York state. The Wild TV web site has a short description of what is affecting

bees and their importance to agriculture and wildlands. You can also watch a couple of short excerpts from the program there:
www.pbs.org/wnet/wildtv/endangered.html.

Every PBS affiliate is different, so check your local listings for broadcast dates and times. There are actually four half-hour-long programs, which will likely be shown as pairs to fill an hour-long slot. Honey bees are in program #3, part of the second hour."

Saltcedar Targeted

Frequently called "tamarisk," saltcedar is one of the country's noxious weeds (like yellow starthistle) for which researchers are trying to find biological control agents. Saltcedar produces nectar and pollen that are important to the nutritional health of honey bees, but the resulting honey is not "table grade." This article on the subject was published in the July-August issue of California Agriculture.

New biological control agent released against invasive saltcedar

One of the West's most noxious wildland pests (a non-native tree called

saltcedar that invades riverbanks, pushes out native willows, chokes streams and impoverishes riparian habitat) is about to get the unwanted attention of a Chinese leaf beetle (*Diorhabda elongata*). In May, a team of biologists from UC Berkeley and the USDA/ARS in Albany, California, released the small black-and-yellow striped beetle in the Owens Valley.

"We hope that the beetle and a leafhopper that already lives on the trees will give the saltcedar a one-two punch to knock it out," says ecologist Tom L. Dudley of the UCB Department of Integrative Biology, who heads the vegetation section of the Saltcedar Consortium, a task force of agencies and stakeholders from eight western states.

The beetle is one of only a handful of natural enemies released in biological control programs to control wildland weeds, compared to more than 100 targeted agricultural plant pests, Dudley says. In addition, most biocontrol releases have targeted herbaceous weeds, not woody plants like saltcedar.

The quarter-inch-long beetle is a good prospect for biocontrol of saltcedar because both larvae and adults feed exclusively on the plant, and the adults produce two or more generations of offspring per year. In addi-

tion to eating green vegetation, the beetles create leaf wounds that allow water to escape, causing branches to wither and die.

A 3-year test in the field with beetles confined to cages showed that the beetle can survive winter and reproduce, and that it effectively defoliated saltcedar.

Some 10 saltcedar species were introduced into the United States since the early 19th century as ornamentals, windbreaks or to stabilize the soil. Since then, two species, *Tamarix parviflora* in coastal and central California and *Tamarix ramosissima* in more arid areas, have invaded river floodplains and lake shores throughout the West, forming dense thickets that can restrict stream flows and cause flooding and erosion. Saltcedar occupies more than one million acres of western land today.

Saltcedar also competes with native plants, such as willow and cottonwood; sucks up twice the water that willow does; and draws salt from deep in the soil and deposits it on the surface, killing understory plants. It supports fewer insects than native vegetation, and fewer riparian-dependent migratory birds. Cows won't touch it, and it interferes with recreational access to public and private rivers and lakes.

Herbicides and bulldozing have been ineffective because the tree grows back.

Supporters of the consortium include several water resource agencies and cities like Woodland, which has suffered frequent floods as a result of saltcedar infestation at Cache Creek. Other consortium members include UC Davis, Texas A&M University, New Mexico State University, University of Wyoming, U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, USDA/APHIS, U.S. Geological service and other co-operators.

"This will be the most intensively researched biological control program ever conducted in the US or any other country to evaluate the success of an introduced insect in establishing and affecting a targeted weed, and to document the recovery process of riparian ecosystems impacted by non-indigenous pests," Dudley said.

Sincerely,

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