



## News and Notes for Hawaii Beekeepers

Thanks to our supporters:



### New Varroa mite control tool now permitted

The EPA recently approved an Emergency Use Permit for the Varroa treatment Apivar (active ingredient amitraz). For requirements go to: [hdoa.hawaii.gov](http://hdoa.hawaii.gov)

more events celebrating pollinators. Plan an event in your community, click [pollinator](#) to see events around the country, and list yours!

tion is easy. Just click the link below, take the survey and find out more [10.selectsurvey.net](http://10.selectsurvey.net)

### Celebrate Bees: Hawaii Pollinator Week is June 17-23

Last year Gov. Abercrombie declared Hawaii's first Pollinator Week. This year we hope to raise awareness with

### Join the nationwide survey Bee Informed Project

This event has become our most important tool to measure honey bee losses in the nation annually. The deadline has been extended due to mainland weather constraints. **We need your help before April 30!** Participa-

### 2013 Legislation of interest

SB482 to increase Home-based Honey Production limits has been submitted to the Governor for signing. HB673 to establish pesticide use reporting is also still under consideration. Visit: [capitol.hawaii.gov](http://capitol.hawaii.gov)

## Hive Beetles and Varroa are at damaging levels!

### What killed my colony?

When you find a colony in your apiary filled with small hive beetles and their slimy mess, its easy to conclude, "Beetles killed this hive." But the symptoms of Varroa mites often come *before* the small hive beetle invades.

hive beetle attacks this weakened hive, beetle damage and slime will quickly overrun the damage of Varroa.

- White pupae may be uncapped and partially eaten.
- Young bees may be dark and dead trying to emerge, with tongues out.

### Varroa signs and symptoms

- Hive entrance: workers, drones and pupae may be tossed out, dead and dying. Some may be crawling with deformed wings, caused by a virus spread by varroa.
- In hive: Young workers may have deformed wings.
- Brood may be spotty, partially uncapped, discolored at many stages. Colony cannot rear brood successfully, few young brood present.

### Sample for Varroa

Visit our website, learn easy ways to check for varroa. [www.hawaiibee.com](http://www.hawaiibee.com)



Varroa symptoms circled: damaged brood looks 'melted,' may be uncapped and partially eaten, deformed wings. Photo Rob Snyder, [beeinformed.org](http://beeinformed.org)



Infested brood may also be discarded from colony.

### **Learn to recognize the symptoms of Varroa in time to save your colonies from beetle attack.**

Varroa do not kill bees outright, but they vector viruses and reduce the lifespan of each bee, which weakens and eventually kills the colony through dwindle. If small

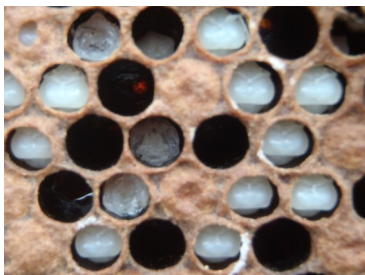


Varroa spreads Deformed Wing Virus, symptoms are noticeable.

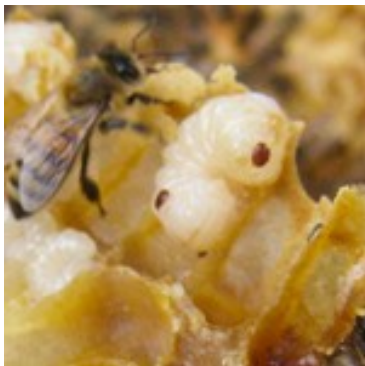
## Research Update: Varroa Resistant Stock



A number tag marks a breeder queen instrumentally inseminated with VSH semen.



Brood infested with mites, beetle or moth has been uncapped and partially eaten.



Varroa can be found on adult bees or on developing larvae.



### Hawai`i Apiary Program

Where we're at:

16 E. Lanikaula Street  
Hilo, HI 96720  
808-352-3010

1428 S. King Street  
Honolulu, HI 96814  
[www.hawaiibee.com](http://www.hawaiibee.com)

### How does it work?

Since Varroa mites have been on the mainland for decades, beekeepers noticed that some colonies died quickly with Varroa and some survived much longer. Scientists have been working to understand these mechanisms of resistance and breeders select lines of bees for this Varroa resistance. VSH (Varroa sensitive hygiene) is one such line (Minnesota Hygienic and Russian are others). Many mainland beekeepers use these resistant lines to reduce or eliminate the need to treat for Varroa mites.

### What makes bees resistant?

Several mechanisms of resistance are known, and there are likely more. Some bees are able to detect Varroa mites in a capped cell, they then uncapped the developing bee. The cell may be re-capped, or cleaned out—which sacrifices the developing bee inside but also interrupts Varroa reproduction. If you see developing bees un-

capped, pulled out of their cells or partially eaten, this is due to nest bees performing “hygienic” behavior. All bees show some level of this behavior, but lines selected for this trait will show a very quick and high degree of sensitivity, which reduces chalkbrood, foulbrood and Varroa levels in hygienic colonies.

### Hilo Breeding Program

With the cooperation of Hawaii's queen breeders and mainland researchers, VSH breeder colonies are studied in our Hilo apiaries. These lines are maintained by importing semen from the mainland and instrumentally inseminating queens. Since February 2012 we have been evaluating these lines for their health, mite levels, and productivity. Although proving these stocks takes many years, we have several lines that have maintained very low Varroa mite levels without treatment.

### How can Hawaii benefit?

Varroa mites require brood production to reproduce. On the mainland, the winter season helps control Varroa levels. Hawaii has the unique challenge (and blessing!) of endless brood rearing. When Varroa first arrived, beekeepers reported having to treat for Varroa every 6-8 weeks. This is a lot of money, time and chemicals to put in our colonies! Resistant stock may not eliminate the need for treatment, but even reducing the frequency of treatment will be a big win!

### How can I get resistant bees?

We encourage beekeepers to start selecting their best stock and rearing queens from those lines, some may be hygienic already! Workshops will be offered to help facilitate these efforts and make improved stock available statewide. At this point, VSH lines are already established on Big Island, Kauai and Maui.

## Visiting experts, workshops, local meetings

### Upcoming public events:

Dr. Bob Danka, USDA-ARS Baton Rouge, selected VSH Bee & Tom and Suki Glenn, of Glenn Apiaries will be in Hawaii to work with the Apiary Program to assess and maintain our Varroa resistant breeding stock. There will be public presentations on Maui

and Big Island, and a workshop may be scheduled in Hilo.

Public presentations (free):

Maui May 14. Kahului MCC KaLama 103, 5pm.

Big Island Hilo May 21.  
Dept of Ag, 16E Lanikaula St, 5pm.

Beekeeping Club meetings:

Big Island Beekeepers: meet monthly, first Sunday, (May 5) Kamana Senior Center in Hilo. Apiary days every second Saturday (Apr 27) 982-3780.

Pahoa bee workshop:  
Monthly, last Sunday, 365-0233.