



# FLORIDA MELITTO FILES

NEWS FOR BEE LOVERS

Joint publication:

Florida  
Department of  
Agriculture &  
Consumer Services

University of Florida/  
Institute of Food &  
Agricultural  
Sciences

VOL 4 | ISSUE 4

## Termites *and* Woodenware

Dr. Bill Kern | Entomology and Nematology Department, Ft. Lauderdale REC, UF/IFAS

IT IS IMPORTANT to realize that there are two ecological types of termites that could attack hive woodenware in Florida. These are the drywood termites (Family Kalotermitidae) and the subterranean termites (Family Rhinotermitidae and Family Termitidae). In most of the United States and Canada, only subterranean termites in the Family Rhinotermitidae are of concern.

Subterranean termites attack wood from their colonies located underground. They can be the most destructive because they attack as a mature colony of 50,000 to several million workers. Damage from subterranean termites is largely prevented by keeping the hives off the ground. Lack of ground contact greatly decreases the likelihood that termites will find your hives. Do not use wood for hive stands; use concrete blocks, ant guard stands, metal or plastic materials. Ant guard stands with tanglefoot or grease in place will prevent subterranean termite access as well as ant infestation.

### **Chemical prevention:**

Treating wood with copper naphthalate will prevent

termite infestation and, most importantly, wood-destroying fungi. Recent work by Dr. James Ellis's lab suggests that copper naphthalate is harmful to bees. Ellis recommends treating only the cross-cut ends of boards, where drywood termites and fungi often attack first.

It has been suggested to soak the wood in a salt solution for three days, let it air dry for a week or two, then paint or wax coat the wood. I don't recommend this as it may stop the termite or fungal damage, but the salt will speed the corrosion of the nails, screws, queen excluders, and frame spacers. Oil-based paint on all exterior surfaces of brood and super boxes, including the top and bottom edges, is still the best control for wood-destroying organisms.

**Physical prevention:** The danger of building a drywood termite colony or wood-destroying beetle larvae into your woodenware at the time of construction can be easily prevented. Build your woodenware with kiln-dried lumber. If you choose to use recycled lumber, solarize your used lumber by sealing it in a clear plastic bag in the sun for several days. Temperatures



**Above:** Formosan subterranean termite soldiers (dark heads) and workers.

over 120°F will kill termites and most wood-destroying beetle larvae. The wood can be placed in a deep freezer for four to seven days with the same effect.

Thirdly, if someone is having their house fumigated for drywood termites, ask to place your used lumber inside the tarped structure. During the fumigation, any termites in your recycled lumber will be killed. The drywood termite fumigation rate may not kill all beetle larvae, however. Once aerated, there is no residual in or on the wood, and it is safe to use for bee hive construction. The fumigant registered for structural fumigation is sulfuryl fluoride gas. Commodity fumigants (methyl bromide and phosphine gas) are also registered for fumigating lumber, but are less

*Continued on back*

For more information on termites see:

<http://edis.ifas.ufl.edu/ig097> — Subterranean Termites | <http://edis.ifas.ufl.edu/ig098> — Drywood and Dampwood Termites

## FROM THE DESK OF JERRY HAYES



Jerry Hayes, FDACS/DPI  
Asst. Chief Apiary Inspection

WE HAVE BEEN RECEIVING lots of questions over the past several months. Because of the tremendous growth in “NEW” beekeepers, there has been an increased interest in beekeeping issues. Let me share some answers that may help.

**How do I become a registered beekeeper?** Registration is a vital part of the protection of Florida beekeepers and their colonies. Knowing who the beekeeper is and how many colonies that beekeeper has allows mosquito control districts to schedule spraying to control disease-carrying mosquitoes while protecting managed honey bee colonies where possible. Registration provides a unique ID number that when displayed on hives and equipment discourages theft, aids in property recovery if theft has occurred, and identifies your property as belonging to you and no one else. Registration allows beekeepers to move freely within the state while passing through the agricultural inspection stations. See Chapter 586 Rule 5B-54.010 Florida Administrative Code for the Florida Department of Agriculture and Consumer Services (FDACS).

**If I am registered, is that the same as inspected?** Registration and inspection are two different but parallel procedures. All beekeepers having honey bee colonies are accounted for by registering your hives annually. Each registered apiary shall be inspected annually for the detection of honey bee diseases and pests, and for unwanted races of honey bees that could pose problems for the industry and general public. Inspection of honey bee colonies keeps Florida’s American foulbrood disease occurrence under 1%. Inspection allows the trained apiary inspector to partner with the beekeeper in a thorough visual inspection for a host of honey bee maladies and can help you with management recommendations. See Apiary Inspection - Chapter 586, Rule 5B-54.011, Honey Bee Diseases, Pests 5B-54.003, unwanted races of honey bees 5B-54.004, Florida Administrative Code.

**I have a beekeeper friend in Pennsylvania who wants to send a few of his colonies down to me for the winter and then take them back to PA next summer. Can he do this?** Sure he can, but there are a few bases to cover to make it all happen smoothly and legally. 1) He will have to have the colonies inspected by the PA Department of Agriculture apiary inspector for American foulbrood, primarily, and be issued a “Health Certificate” and an “Out-of-State Shipping Certificate” to allow entry into

Florida. We do not want honey bee diseases, parasites and pests in the state. 2) On this Out-of-State Certificate there will be the destination in Florida and contact information for the owner in PA and the manager, which is you, in Florida. When the bees are on the ground in Florida, we will do an inspection to verify PA’s results and register the owner of the colonies. 3) You would be a Florida registered and inspected beekeeper of your colonies and your friend would be a registered and inspected beekeeper of his colonies, even though all his colonies may be in the same apiary as yours. You would be the manager, not the owner.

**Where do I put the registration number on my hives?** When you register, you are issued a unique permanent registration number that is yours forever. We call this number an FLO number because it begins with the state abbreviation FL followed by a 0, then a county number, a combination of numbers, and finally a letter that represents the first letter of your last name. This number should be permanently imprinted on the upper left corner of hive bodies in letters at least ½ inch tall. Many beekeepers, because of increasing colony thefts, are also putting their FLO number on the inside of boxes and frames to further discourage thieves and to ease colony recovery. See Chapter 586 - Rule 5B-54.013, Florida Administrative Code.



# Bee Hunting in South Africa

Anthony Vaudo



**Above:** Anthony Vaudo digs deep into a cliffside Cape honey bee colony

I WAS FORTUNATE ENOUGH to spend September 2009 to July 2010 in South Africa collecting data for my Master's degree research in association with the Honey Bee Research and Extension Lab at the University of Florida. I studied the natural history of honey bees found in the Eastern Cape Province near the town of Grahamstown, South Africa. I investigated differences in nest site selection, colony strength, and population densities of honey bees nesting on livestock farms and game reserves.

Honey bees are native to South Africa, and wild populations are abundant and thriving. South African bees have not experienced the same declines as honey bees in the States, making South Africa a perfect place to study wild honey bee colonies. The honey bees inhabiting the region are Cape honey bees (discussed in the April–June 2009 Mellito Files), not the African bees that have invaded the southern United States and South America.

The first step of my project was to locate as many wild colonies as possible. I gathered data on four livestock farms and four game reserves. I also located honey bee colonies in and around Grahamstown. Bee hunting may have been the best experience of my research. I often

would spend all day searching for colonies, mainly by following bee lines. Foraging honey bees

were attracted to feeding stations I established the night before the bee-lining began. The stations consisted of a post on which a container filled with a honey, sugar and water solution was placed.

Once the foragers found the feeding station, they would fly directly back and forth from their colony to the station. I would follow the direction of the bee line right to the entrance of their nest. Of course it was not always easy. The bush in that region can be very thick, and most plants had thorns. Many times the only way through was to crawl. In addition to crawling, there was always the vigilant watch for rhinos! The area had many cliffs and steep hills I had to climb to find the bees. However, the views made it all worthwhile. I found many colonies in the ground, in trees, and in the cliffs. The colonies in trees and cliffs were more defensive than the ones in the ground, sometimes buzzing or stinging me as I approached.

In order to study colony strength, I had to remove the comb from the nesting cavities. Unlike many removals conducted in Florida, all removals I conducted were with active hives. I wanted to leave the colony alive to minimize ecological damage. I had to be extremely patient and careful not to kill the queen or damage any comb I removed. I used basic and inexpensive tools to conduct the removals including a pick, hammer, chisel, hand saw, machete, knife, and a smoker. When removing comb

out of cliffs, I often used a “honey gathering stick” made of fencing wire. Sticks such as this are used by local people to break off the comb from the ceiling of the cavity and then hook and drag it out. Removing colonies from trees involved cutting a hole in the tree large enough to reach into but not cutting off the trunk or branches. I had to dig a hole in the ground with a pick in order to open a ground cavity, but also had to ensure I did not cause the ground to collapse on the colony.

I also collected swarms of bees in boxes in order to weigh them. It was fun to capture the queen and/or collect the cluster of bees with my hands and attempt to collect the entire swarm. By weighing the swarm along with a small sample of workers, I was able to estimate the population of the colony. Finally, I created and tested a population index to estimate the population density of colonies on farms and in game reserves: I counted the number of bee lines established at each feeding station placed in the field.

I had an amazing experience in South Africa, being up close and personal with the nature and ecology of the Eastern Cape. I was able to hike parts of the world that many people will never visit. I plan to present my research at the Florida State Beekeepers Association meeting in October, where I can give much more detail about the people and places I saw. Hope to see you there!



**Above:** A Cape honey bee forages for nectar



## Florida Beekeeper Management Calendar – Fall 2010

	Month	Management Calendar	Blooming Plants
<p><b>North Florida</b></p> <p>Ensure that colonies have enough food. It can be cold in N. Florida during winter.</p>	<p><b>Oct – Dec</b></p> <p>Similar management schemes in Oct, Nov, and Dec. Pests become less of a problem late in year.</p>	<p>1) Varroa populations peaked in Aug/Sept. The economic threshold is 60+ mites/day on a sticky screen or 17+ mites in an ether roll for a <b>colony of average strength</b>. Treat if you exceed these numbers. Options include: Apiguard, ApilifeVAR, Mite Away II</p> <p>2) Can treat colonies for Nosema disease using Fumigillin. Colonies may need as much as 4 gallons of medicated syrup to control <i>Nosema cerana</i></p> <p>3) Monitor for and control small hive beetles (options include Checkmite+, GardStar, Hood traps and West Beetle traps)</p> <p>4) Feed colonies if light (colonies can starve!)</p> <p>5) Can treat for tracheal mites (mix vegetable oil and powdered sugar until doughy - not sticky to touch: place a pancake-sized patty on top bars of brood chamber)</p>	<p><b>Oct:</b> Spanish Needle, Mexican Clover<sup>N</sup>, Primrose Willow<sup>N</sup>, Spotted Mint<sup>N</sup>, Golden Rod<sup>N</sup>, Vine Aster<sup>N</sup>, Smart Weed<sup>N</sup>, Bush Aster<sup>ND</sup></p> <p><b>Nov:</b> nothing new blooms</p> <p><b>Dec:</b> nothing new blooms</p>
<p><b>Central Florida:</b></p> <p>Varroa remain an issue through winter</p>	<p><b>Oct – Dec</b></p> <p>Similar management schemes in Oct, Nov, and</p>	<p>1) Varroa populations peaked in Aug/Sept. The economic threshold is 60+ mites/day on a sticky screen or 17+ mites in an ether roll for a <b>colony of average strength</b>. Treat if you exceed these numbers. Options include: Apiguard, ApilifeVAR, Mite Away II</p> <p>2) Can treat colonies for Nosema disease using Fumigillin. Colonies may need as much as 4 gallons</p>	<p><b>Oct:</b> Spanish Needle, Mexican Clover<sup>N</sup>, Primrose Willow<sup>N</sup>, Spotted Mint<sup>N</sup>, Golden Rod<sup>N</sup>, Vine Aster<sup>N</sup>, Smart Weed<sup>N</sup>, Bush Aster<sup>ND</sup></p> <p><b>Nov:</b> nothing new</p>

<p>due to warmer temps.</p>	<p>Dec. Pests become less of a problem late in year.</p>	<p>of medicated syrup to control <i>Nosema cerana</i></p> <ol style="list-style-type: none"> <li>3) Monitor for and control small hive beetles (options include Checkmite+, GardStar, Hood traps and West Beetle traps)</li> <li>4) Feed colonies if light (colonies can starve!)</li> <li>5) Can treat for tracheal mites (mix vegetable oil and powdered sugar until doughy (not sticky to touch): place a pancake-sized patty on top bars of brood chamber)</li> </ol>	<p>blooms</p> <p><b>Dec:</b> nothing new blooms</p> <p>* Brazilian Pepper blooms from September through October and is a significant Fall source of nectar for bees.</p>
<p><b>South Florida</b></p> <p>Varroa are an important issue in S. Florida in winter because colonies rarely are broodless</p>	<p><b>Oct – Dec</b></p> <p>Similar management schemes in Oct, Nov, and Dec. Pests become less of a problem late in year.</p>	<ol style="list-style-type: none"> <li>1) Varroa populations peaked in Aug/Sept. The economic threshold is 60+ mites/day on a sticky screen or 17+ mites in an ether roll for a <b>colony of average strength</b>. Treat if you exceed these numbers. Options include: Apiguard, ApilifeVAR, Mite Away II</li> <li>2) Can treat colonies for Nosema disease using Fumigillin. Colonies may need as much as 4 gallons of medicated syrup to control <i>Nosema cerana</i></li> <li>3) Monitor for and control small hive beetles (options include Checkmite+, GardStar, Hood traps and West Beetle traps)</li> <li>4) Feed colonies if light (colonies can starve!)</li> <li>5) Can treat for tracheal mites (mix vegetable oil and powdered sugar until doughy (not sticky to touch): place a pancake-sized patty on top bars of brood chamber)</li> </ol>	<p><b>Oct:</b> Spanish Needle<sup>ND</sup>, Mexican Clover<sup>ND</sup>, Primrose Willow<sup>ND</sup>, Smart Weed, Melaleuca<sup>ND</sup>,</p> <p><b>Nov:</b> nothing new blooms</p> <p><b>Dec:</b> Maple, Willow</p> <p>* Brazilian Pepper blooms from September through October and is a significant Fall source of nectar for bees.</p>

<sup>N</sup>Continues to bloom in Nov, <sup>D</sup>Continues to bloom in Dec, <sup>ND</sup>Continues to bloom in Nov and Dec

# Theft is Still Rare In Our Small Beekeeping Industry

Nancy Gentry

From *American Bee Journal*, September, 2010  
(reprinted by permission)

IF YOU GREW UP watching Rowdy Yates (Clint Eastwood) every Friday night on *Rawhide*, then you remember that the worst villain on the range was the cattle rustler, who, with his crew of lowdown thieves, would cut off part of the herd from the big cattle drives and then rebrand the steers. He never succeeded of course because Yates always tracked him down. Good guys 1, bad guys 0.

GPS tracking has pretty much eliminated cattle rustling in the 21st century, but what about bee rustling? These villains don't wear masks but could be seen suited up in white wearing a bee veil covering their face. Who are these wild desperadoes? We're talking about beekeepers stealing from other beekeepers, and given that a hive is now worth about the same as a hotel room for the 2011 Galveston beekeeping convention, we may start hearing a lot more about bee rustling.

The Florida Farm Bureau's Apiary Advisory Committee had already taken steps back in April to coordinate efforts with the Florida Office of Agricultural Enforcement after hearing reports of bees being stolen in South Florida. Is Florida the only state having to "rustle" with bee rustlers? Evidently not. In

the July *ABJ* edition, "Letters to the Editor," "Beekeepers Getting Stung By A Beekeeper," Dale Wolfe, Wolf Honey Farm in Baldwin, Wisconsin, reported a tricky scheme of these "midnight beekeepers" offering to pick up your bees, winter them in the South and then bring them back in the spring. "You may or may not get all of your bees back, says Wolfe. You may only get half of them and they may not be in your equipment. You might end up with a lot of junk."

The large migratory beekeepers should be seeing the worst of this bee rustling, but according to Dave Mendes, owner of Headwater Farms, North Ft. Meyers, Florida, and current president of the American Beekeeping Federation, "It's not as big a problem as you would think. In every industry there are a few bad apples, but with bees you know for sure the only people who will steal hives are other beekeepers. Since we are a relatively small industry the chances of getting caught are likely greater than with car stereos or jewelry."

What's a beekeeper to do? J.T. Smith, an investigator with the Office of Agricultural Enforcement, offers these suggestions; "First, as required by Florida law, register your hives with State Apiary and then brand on

the boxes your name and FL registration number. Another clever idea is to brand a unique, more secretive symbol on the bottom of your frames and inside your boxes. Finally, file an incident report with your local sheriff and notify State Apiary of your theft. In Florida, since these crimes involve agriculture, the county agricultural officer with the Office of Agricultural Law Enforcement will also initiate an investigation."

Should we start protecting our hives with electrode fencing and razor wire? Mendes offers a more positive comment: "I have not had any great problems with theft over the last 35 years ... and the bigger story is why there is not more thievery. My belief is that most people and consequently most beekeepers are honest and they respect the hard work that goes into beekeeping. Please include the 'good news' in your article along with stories of crooks and bad people."

If further information is needed, contact State of Florida Office of Agricultural Enforcement: 850-245-1300, or see <http://www.fl-aglaw.com/>.



## FROM THE DESK OF DR. JAMIE ELLIS

### RESEARCH at the UF Honey Bee Research and Extension Laboratory — Part 2

IN THE LAST ISSUE of the *Melitto Files*, I introduced you to how and why we do research at the University of Florida HBREL. I shared with you how we decide what topics to investigate and why we diversify our projects. The next steps in the research process are (1) conduct a literature review of the topic, (2) develop a project purpose and hypothesis, and (3) secure project funding. I discuss these steps in this column, using varroa control as a running example.

Many people worldwide have studied varroa for decades. Consequently, every time my team and I investigate varroa, we risk repeating work that has been done by another researcher; thus the need for a literature review. If my main topic is varroa control, then I should search for any/all information related to controlling varroa in honey bee colonies. Not only will this help me avoid repeating a project, but conducting a literature review may give me new ideas regarding varroa control, suggest new avenues to explore, or just introduce me to new research methodologies that I have never considered before.

Conducting a proper literature review also helps one develop a project purpose and hypothesis. Having a clear purpose is perhaps the most im-

portant of all of the components involved with doing research. In our example of varroa control, one might be led to believe that the project purpose is to “control varroa mites.” Though true generally, this purpose is not specific enough to develop a proper experimental design. Hopefully, our literature review will identify an under-exploited avenue of varroa control. For example, my lab and I recently began pursuing RNAi control of varroa. This is a new molecular biology avenue for controlling varroa that may prove very effective in the future. Consequently, our project purpose became “controlling varroa mites in honey bee colonies using RNAi technology.”

With a purpose in mind, we must develop a hypothesis: an educated guess at the project’s outcome. For example, we may hypothesize that we can use RNAi technology to develop a varroa control that will not harm bees. We derive this hypothesis from a proper literature review where we found that RNAi is used to control mosquitoes and termites.

Sadly, many great ideas in the bee research world stop at this point. It is easy to identify new avenues to research. Yet without funding, many research projects simply never get off the ground.



Dr. Jamie Ellis  
UF Assistant Professor

Often, people have a misconception about how research at universities is funded. You may believe that researchers are given hundreds of thousands of dollars every year to study whatever they wish. Nothing could be further from the truth. Research costs money (bees, equipment, people to do the work, gas to drive to the research sites) and one needs the money in hand to undertake a research project.

Most funding originates from a competitive grants process, where my idea (RNAi control of varroa) competes against everyone else’s idea (mite control on chickens, bacterial control in milk) for a limited pool of funding. I spend a lot of time writing grants to secure funding for the work at my lab.

We also fund research in other ways. The Florida Department of Agriculture and Consumer Services, the Honey Bee Technical Council and the Florida State Beekeepers Association all have donated funds to my lab to do research. These funds are needed greatly (and appreciated dearly). Securing funding can take time, but research dollars are needed for even the most promising research projects to begin.

In coming issues of the *Melitto Files*, I look forward to continuing to discuss how and why we do research at the HBREL.

Termites,  
continued from page 1

accessible to most beekeepers. All fumigants are restricted-use pesticides. For those with concerns about the safety of these fumigants, remember that everything you eat that is made from rice, wheat, or corn (flour, bran, or meal) has likely been fumigated by one of these gases two or three times before it ever reaches your grocery store.

I hope this helps you limit the threat or better control termites that might attack your beekeeping equipment.



**Above:** Subterranean termites use mud tubes to travel over exposed surfaces. The "mud" is actually composed of soil, feces and saliva. This is the best indication of a subterranean termite infestation in your bee equipment or your home.



## "Establish the Superiority of Florida Honey"

THAT IS THE TITLE of the research project that Dr. Liwei Gu, Lgu@ufl.edu, is hoping to establish, funded by the Florida Department of Agriculture through a USDA Specialty Crop Block Grant. When Florida honey sits on the grocery store shelf, it has to compete with low-quality, low-cost, imported honey as a sweetener. With the current state of the economy, many shoppers are opting for the low-cost product, and the premium Florida honey is passed over. However, honey is more than a food commodity. Different honeys in many parts of the world have been identified as having traits and characteristics of being an invaluable medicinal product. If you have time, search "Manuka Honey" from New Zealand and see the transformation it has undergone from low-quality bakers' grade honey to a medical product for curing human infections and diseases. It is approved to use in human wound dressings and bandages, and it is used to cure stomach ulcers from *Helicobacter* bacteria, eye infections, and many other approved medicinal uses. Do some Florida honeys have the same properties? If they did, would a whole new market open up for some Florida honey? Could this increase the market value for Florida honey? That is what Dr. Gu intends to find out, but he needs monofloral varietal honeys and honey from mixed floral sources. Ms. Sara Marshall, saramars@ufl.edu, will be the "honey coordinator." She will collect and record all samples. If you want to participate and have tupelo, citrus, blueberry, watermelon, gallberry, palmetto or mixed-floral-source honey from anywhere in Florida, Sara needs a sample. Please participate and send her an email.

Thanks,  
Jerry

### Jerry Hayes

Florida Department of  
Agriculture & Consumer Services

1911 SW 34 Street  
PO Box 147100  
Gainesville, FL 32614-7100  
352-372-3505 x128  
hayesg@doacs.state.fl.us

[www.doacs.state.fl.us/pi](http://www.doacs.state.fl.us/pi)

### Jamie Ellis, Ph.D.

University of Florida Institute of  
Food & Agricultural Sciences

Bldg. 970, Natural Area Drive  
PO Box 110620  
Gainesville, FL 32611-0620  
352-273-3924  
jdellis@ufl.edu

[www.Afbee.com](http://www.Afbee.com)

[www.ufhoneybee.com](http://www.ufhoneybee.com)

<http://solutionsforyourlife.ufl.edu/>

