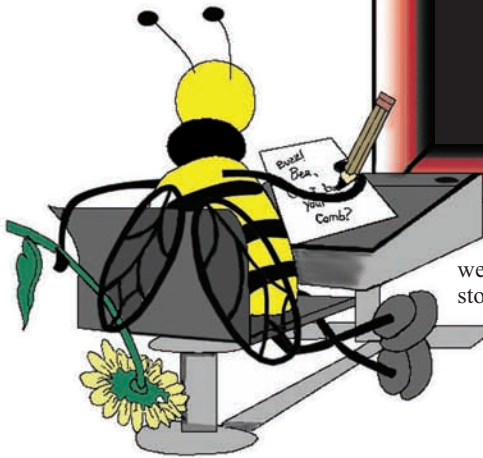


The Classroom by Jerry Hayes

Please send your questions to Jerry Hayes
Email: gwhayes54@yahoo.com



honey...not good in full winter. But, they were probably not able to eat, collect and store a lot of this, so I doubt it did any great harm to the bees or any already dark fall honey such as goldenrod or aster.

Q ALTERNATE FOOD SOURCE



We enjoy reading your articles in the *American Bee Journal*. We have a question:

We have a few hives and also feed a few cows. Last fall we were feeding the bees high fructose corn syrup (HFCS), but noticed the bees were drawn to the cattle feed with dextrose and molasses. They really seemed to like this over the corn syrup. Will the dextrose and/or molasses cause any harm to the bees? Will this make the honey darker?

Steve Heston

A

Actually, Steve, honey bees can locate "food" more easily away from the colony rather than if they are near a feeder. The closest a honey bee can direct her sisters to a food source (flower), is just a few meters from a colony. When food such as HFCS is fed in a colony, each individual bee has to find the sources herself as it is too close to dance/vibrate/and squeak to her sisters about. All that said, your cattle sweet feed was easier to locate and tell the whole colony about than your in-hive feeder. The molasses part of this equation would introduce lots of indigestible material to the

Q Do Bees Have Mops and Sponges?



Thanks for your classroom. I look forward to reading it with each new issue, and have just ordered your book. This has been my first year in beekeeping. I placed my extracted frames outside to let the bees clean them up, and before I put them away for the winter, it rained (a lot) and filled the cells in the comb with water. I shook the frames out and tried to dry them up, and then stacked the boxes with the frames in them in my barn. I placed a board over the top of the stack to keep the mice out.

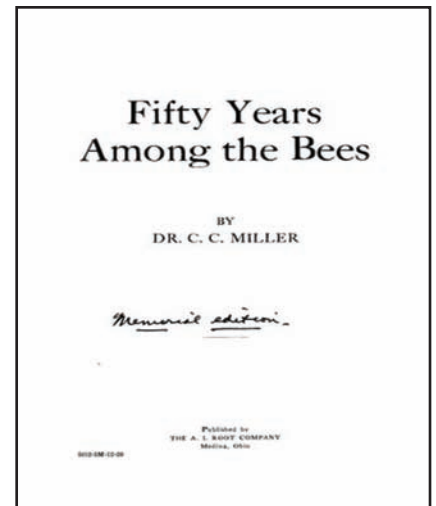
It seems there was still some moisture in the boxes, the frames, and the comb. Now I have a fair amount of mildew growing on the surfaces of the wood and on the wax of the combs. Is it okay to use these frames next year? Will the bees clean out the mildew before storing honey in the comb? Can I do anything now to make it easier later when I want to add these supers?

Thank you,
Jim Dyreby

A

Jim, the bees will clean them out but less stress, cleaning up icky stuff, is always better than more. How about a low pressure spray with a household bleach solution (1 tablespoon per gal of water) to kill the mold and leaving them to air out exposed to the sun before using them successfully in a colony. You should be fine.

Q Who Lives? Who Dies?



Thanks for everything you do to help new (and old) beekeepers. I enjoy your column every month. Recently, I was reading Charles Miller's *Fifty Years Among the Bees* (1915). It was a fascinating and enjoyable read. It was interesting to get a historical perspective on many of the same beekeeping problems we face today. One of the things he recommended was to only feed strong colonies, taking frames of honey from these to give to the weaker hives. He said that strong colonies were able to utilize the food more effectively, making this a more efficient method of feeding. I can also see how it would make it easier to only feed your bees in the home apiary and then take frames of stores out to other yards. What are your thoughts on this? The big one

in my mind is the risk of transferring disease along with the food, but maybe since the comb is always going from strong colony to weak colony this wouldn't be as big of an issue?

Thanks for your help.

Matthew LaForge
Madison, WI

A

Thank you for the compliment, Matthew. It is amazing that the challenges to keeping honey bees successfully has certainly changed because of varroa primarily, but the solid foundational principles of successful beekeeping really haven't change.

There is always a risk that transferring frames of whatever between and among colonies will introduce concentrated disease pathogens or bolster parasite load. But naturally stored honey from a large healthy strong colony is the best food for another honey bee colony. Sometimes taking surplus frames of stored honey to other colonies is a reasonable management decision to keep colonies alive. Sometimes it isn't.

The real question is why is the colony to be fed weak and do you want to keep honey bees that are systemically, genetically, functionally not able to store enough honey to survive? Some honey bee colonies cannot adapt, adjust or manage to do those things that will allow them to be a honey bee colony that will grow enough to reach the goal of reproduction by swarming. That is the honey bees' genetic, biological goal to grow quickly enough in spring and early summer to be able to asexually reproduce and spread their genetics around in a new colony started with a swarm.

If they can't do this, they are essentially welfare bees. Mr. Darwin and survival of the fittest was trying to eliminate them, but with beekeeper intervention they may stay alive long enough to be a weak colony in spring and summer and fall and winter again, perpetually weak and needing food, disease control and parasite control. Beekeepers have tough management decisions to make sometimes. Deciding who lives and who dies or is merged with another is one of those decisions.

Q Sustainable Honey Bee Nutrition

We have 3-4 acres that is tillable by our beehives. Is there some type of plant or flowers that would be more beneficial to us by planting (instead of corn or soybeans) for our bees to get the maximum nectar for honey? We live in north central Indiana. We also have a ditch bank that is very close to the hives that run through the tillable acres. Any suggestions would be appreciated.

Rob & Teri Schmicker



Yellow sweet clover

A

Rob & Teri, you live in a perfect climate for white and yellow sweet clover and if you want a multi-purpose crop that theoretically could be harvested, alfalfa is a great choice if left to flower before cutting. These two crops, especially the sweet clover, re-seed themselves so would be great on the ditch bank. They are legumes so add natural nitrogen to the soil and when tilled in fall add organic matter to the soil. I am envious of your potential.

Q Stupid Bee Decisions



I enjoyed meeting you at the Cook-Du-Page Beekeeping Association Annual Banquet. Thanks for the teaching material. I'll be using it in the classes I'm teaching this Feb, March & April. I removed the hive in late November in Plainfield, Illinois. It was 25 feet up in the tree measuring 4.5 ft long, 18 in wide, and 12 in deep. I shared about 35lbs of capped edible honey with the dozen

or so neighbors who came out to watch and a lot of good clean new wax. As careful as I was, I could not find the queen or save any of the bees this late in the season. Could you talk about why bees would make such a hive in an environment that would not support it through our winters here in Illinois?

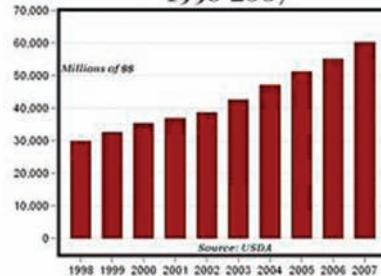
A

Ed Bell, Ed.D. (aka Dr. B.)

Hello Ed, excellent question that probably does not have a solid answer other than—genetics. Honey bees are survivors. Honey bees originated in Africa millions of years ago and just like us carry around lots of genes that most of the time, are turned off. But, given certain environmental pressures these genes turn on and direct honey bees to give it the old Darwin try. Most of the time, it is not successful. But, if you are a honey bee colony with this propensity in the Southern tier of states, you might be able to pull it off. Now, that is with the European-based genetic honey bee. Add in tropical/sub-tropical African honey bees' genetics that are everywhere from queens and package bees shipped all over the country from Southwestern sources and there is reinforcement of these different behaviors that are adapted to the tropics and sub-tropics. It is still Darwin, but only in action in winter when these genetics do not allow the bee to survive long periods of cold weather. Everybody has summer and this summer is tropical and subtropical whether you are in Oswego or Alabama. The bees with topical genetics get shipped to the north and fail in winter.

Q Locavores / CSA's / Regional Agriculture

U.S. Imports:
Consumer-Ready Food
1998-2007



I learn a lot from your "Classroom" column in *American Bee Journal*, and I wanted to respond to a couple of items in the January 2011 issue. First of all, I agree that the rate at which we are moving toward importing much of our food is appalling. However, where I live in the Finger Lakes region of New York State, there is strong support for local foods. There are a large number of

farm markets, and our local grocery store features produce from local farms during the summer, including pictures of the farmers and their exact locations. There is also strong support for organic foods. I hope that this trend can turn around the tide of imported food.

Secondly, there was the person who wanted to control small hive beetles with a roach trap. We also had a problem with small hive beetles this summer, and researched non-chemical ways to control them. We tried putting out pans of cooking oil to trap them in the bottom of the hives, and finally bought some hive beetle traps. They seemed to work, and we had no need to use chemicals in our hives.

Well, that's just my two cents' worth, from someone who's only been keeping bees since 2008. My husband and I really enjoy working the bees together, studying them, and producing honey.

*Thank you,
Cathy Carstens*

A

Cathy, I also hope that more people will support local agriculture. There is a movement here called Community Supported Agriculture (CSA) that links people with local growers. It is exciting. But, the pessimist in me says that the majority of 312 million people in the U.S. don't care. Kind of like ancient Rome. Give the people entertainment at the Coliseum (Cable TV), cheap food (Potato Chips) and comfort (Recliner and remote) without responsibility and things eventually go down the tube. We just need more like you in the 312 million.

Sometimes chemicals are needed, especially for varroa control or antibiotics for bacterial disease. Chemicals are part of the tool box which should always be used with caution.

I am glad you and your husband have found honey bees. They are amazing.

Q

Do the Math and It Can't Be Done



Hi Jerry, I read in the USDA publication *Productive Management of Honey-Bee Colonies* by C. L. Farrar that package bee producers, when shaking bees, keep the populations of the hives in the range of 10,000 to 20,000 bees. Approximately how many frames of brood does a hive of such strength contain?

*Thank you,
Joe Schultz*

A

Joe, a pound of honey bees is calculated to be about 3,000 bees. So, if a 3 lb. package (9000 bees) is removed from a colony using the figures above, then there would only be 1,000 to 11,000 bees left in the colony. That can't be right can it? I haven't read Farrar in years. This is a pretty old reference, but it should be closer than that.

Hexagonal honey bee worker cells have been calculated to be 28 13/16 per square inch. Most sources speak of the general rule of thumb of 25 per square inch on a standard comb face. Let's say that a colony needs to stay at the 20-30,000 range of population to be a viable functioning colony. Let's also say workers live 8 weeks in summer. So, there is population replacement that has to happen every 3 weeks (developmental time from egg to emergence). Then, the beekeeper manager wants to take out 9,000 bees for packages every week. It takes 3 weeks from egg to emerging adult. I hope you are better at math than I am. Tell me what is needed in brood production to keep this system going.

Q

Treatments and Residue Concerns



My wife and I have been beekeepers for the past three years, and we really enjoy your column. I returned to the hobby after a 45-year absence—having first kept bees as a teenager with my grandfather in the 1960's. What changes there have been!

In the November 2010 issue, page 1020, you advised Gordon Shaw that he could use honey for human consumption that had been on the hive during earlier Apiguard treatments.

We have a similar situation on one of our three hives, and I would like to confirm your answer. We treated this powerful hive with Apiguard from 8/13 to 9/10 this year. We had a medium honey super above the excluder when treating, because we thought the hive was too populous to squeeze the bees down into the two-deep-box brood nest, like we did with the other two hives.

Now that we're about to winterize our hives, I would love to harvest the honey in that super for OUR use. (Honey sales have been good, and we'd like to have a little more to sell.) And yet, that seems to break the "Number-One Rule" I learned that one should *never* use honey for humans that has been on the hive during pest/disease treatment.

Please tell me again it's okay in our case. Does the fact that our honey would not be going through the winter (like Gordon's plan) make any difference?

Please advise asap. We don't expect you to use this in your column, but I would appreciate hearing what you think we should do.

*Thanks, Jerry
David and Susie Kronwall*

A

David and Susie, I think you will be OK. The label doesn't indicate any problems or concerns. Pest and disease "number-one rule" is meant to protect the consumer of any honey bee products from residues of many pesticides, fungicides, herbicides, etc. but, it depends on the pesticide, fungicide or herbicide. For varroa control it can be powdered sugar or a product like Apiguard that uses an essential oil from the Thyme Herb (Thymol) that is not a mammalian toxin in the dosage used in Apiguard or as a cooking ingredient. Most other varroacides and antibiotics don't meet this level of rigor.

A fungicide could be chlorine as in most municipal water supplies or as a cleaning additive in your washing machine. A herbicide could be salt or vinegar. Certainly any of these examples could be abused and used in quantities and concentrations that could be harmful to you and I, but less likely than some chemicals produced for quick knock-down in small amounts for industrial agricultural use. The label is the law, so follow all instructions. You will be OK with Apiguard, a thymol-based product.

Q

TAKE IT OUT

Jerry, thanks for the time you take to answer the questions submitted to you. Your Classroom section is always the first area I turn to when my magazine arrives.

Question 1:

I applied Apistan in late August to my hives as per instructions with 2 strips per deep. However, I missed my window to remove them and to date have not had weather to remove, so at this point I fear they may reside in the hive until February. I live in the Pacific Northwest and the weather has not been cooperating. Should



I just bite the bullet and go in and take them out now, regardless of weather or can they remain in the hive for the winter? What's the downside?

Question 2:

Honey storage and bottling. I was fortunate to have a good honey year and have excess honey in 5 gallon buckets that I want to keep for the winter and bottle as needed. What is the best way to store this honey so that it does not crystallize or degrade in any way? I have heard to keep it warm, but how warm? Would keeping up to 30 gallons in a bottling tank at a set temperature be a good idea?

A

Thanks,
Mike Quinn

Mike, we all get busy for sure and forget what is on our to do list.

1. Pick the next hour/day/week when your temp will be as close to 60 degrees (57 degrees F actually) as possible and go in and get them out. The longer you leave them in there, the more exposure to an insecticide the bees as a colony have.

Varroa exposed to sub-lethal amounts of the pesticide, fluvalinate, in Apistan, causes them to develop resistance to Apistan more quickly. The downside is worse than disrupting the colony for 5 minutes.

2. Keeping the honey warm continuously forces it to "age" if you will, more quickly. Honey, as it ages darkens, loses flavor and aroma and forms a product called HMF (hydroxymethylfurfural) that is a marker of old mishandled honey.

Crystallization is not a sign of degradation. It is a supersaturated sugar balancing action. Not all honey crystallizes. It might be better to let it crystallize and then warm it to re-melt the honey than keep the honey stored in warming tank with the heat on. Or, put it in a deep freeze and freeze it as a great way to retard crystallization, as well as retard darkening and loss of flavor.

Q

Quick update and a question:

1. Got all the Apistan out! In doing so, I also found a few week hives and one dead-out, so that was fortunate in that I could do some combining of hives and cleaning out and storing the deadout.

2. Deadout question. I now have a couple deeps that have a good amount of honey and



Wax moth damage

pollen in them. It's too late to have them cleaned out by bees and so I need to store. How best can I do this if in fact I want to use the pollen and stored honey for next year? I have thought about freezing for 24 hours to kill any "bugs" and then placing in large sealed garbage bags, in a cool location. Is this a good way to handle these deeps?

Thanks,
Mike Quinn

A

That is a good idea, Mike. I would freeze them for 3-4 days though and/or if you can leave them in the freezer until you need them in spring is even better. Be sure the plastic trash bags are really sealed well. These bags seem to be perfect breeding grounds for wax moths.

Q Africanized Bees Not the Answer



USDA Photo of AHB & EHB

KAIETUR NEWS online: "Countries (South America) rush to acquire Africanized bees to maintain food security."

"...the global dilemma caused by the death of the bees (CCD) is compounded by the fact that some developed countries had sought to condemn the Africanized bees that are known to thrive best in Guyana and other tropical locations.

America, for instance, has condemned the Africanized bees. They exterminate them. Africanized honey bee will not produce as much honey as the Italian bees in America...

It has, however, been discovered that although some countries have condemned the Africanized bees, efforts are now being made to source them if beekeeping activities are to be sustained on a global basis...some countries now have to take our Africanized bees to breed with their bees for them to get back the resistance...(to diseases)"

This is a short excerpt from the news article about how some South American countries want to use Africanized bees to overcome CCD and other pests, pathogens and parasites. For those interested, here is my reply to the Kaieteur News article.

A

As one of the founding members of the CCD Working Group in the U.S., I would like to comment if I may. We named the malady Colony Collapse Disorder because there was no clear-cut cause and effect and thus a disorder. Genetically based European Honey Bees do not do well in Tropical / Sub-Tropical environments. They are an insect that evolved in a temperate climate with distinct seasons, the most significant being winter. Honey bees had to learn collect and successfully store food for months long winter when there were no flower nectar and pollen resources available.

With no seasonal cues temperate honey bees do not do well in the tropics. That is why Brazil in 1957 decided to experiment and bring over a honey bee from a similar latitude in Africa hoping to breed out its defensive aggressive behavior. It wasn't to be and we could have a discussion of the environmental blunder this was, but that is water under the bridge now. Suffice to say that hundreds of humans have been killed by African Bees, thousands or 10's of thousand of livestock and wild animals in South America, Central America, Mexico and some locations in the U.S., my State of Florida included.

Commercial migratory beekeeping in the U.S. and Canada is very different than stationary tropical /sub-tropical beekeeping. Loading 500 colonies on a semi-truck and transporting it around the U.S. for fee-based pollination or honey production is tough on the bees and the beekeepers. The largest beekeeper in Florida has approx. 15,000 colonies with lots of beekeepers with thousands, hundreds, tens and a couple in their backyard. But, commercial beekeeping in my mind is not beekeeping so much as "production agriculture". European-based honey bees have to be treated for varroa, are fed artificial diets, are exposed to agricultural chemicals, and are bounced around from time zone to time zone. The colony, the unit of production, is pushed pretty hard. And with pollination-dependent agriculture abutting urban and suburban areas, having gentle honey bees is a must. Remember our "National Past Time" in the U.S. is not football, baseball or basketball, it is suing each other. The liability of having defensive, aggressive honey bees is real and cannot be discounted. We cannot hide or cloister large numbers of honey bee colonies. The general public will not tolerate large numbers of human fatal or non-fatal events or stinging events on pets or livestock. We are already having problems in Florida with zoning and ordinances which restrict beekeepers.

For us the answer is not African Bees. It is better understanding honey bee health and how to encourage and facilitate it. We are working towards that end.

Thank you,
Jerry Hayes,
Apiary Section, Chief
Florida Dept. of Agriculture
and Consumer Service.