

BEE YET

Diagnosis Is A Tricky Thing

Dr. Tracy Farone



During my early years in clinical practice, I managed a case of a dog, “Red”, with recurrent vomiting. Red was a fiery brown, mixed breed pup owned by a happy young couple. The dog seemed otherwise healthy, but he would come into the hospital for vomiting, we would treat him with the typical meds, he would improve, but ultimately, he would be back in a few days. X-rays and bloodwork did not show anything particularly abnormal. But one evening, Red came in very sick, and I decided it was time to open him up. X-rays were now consistent with an obstruction of the stomach.



Interestingly, in surgery, I found a wine cork in Red’s stomach at the pylorus, blocking the outflow to his duodenum (small intestine). I was able to easily “pop” the cork from the stomach, much to my nurse’s

amusement. After removing the cork from the stomach, I continued to “run the gut” . . . by slowly palpating the entire small intestine . . . duodenum, jejunum, ileum, down through the colon, feeling for any other foreign object, lump, or bump. My nurse asked me why I was doing this since I clearly already found the “problem”. My answer was because I was trained to always look for more than one (condition).

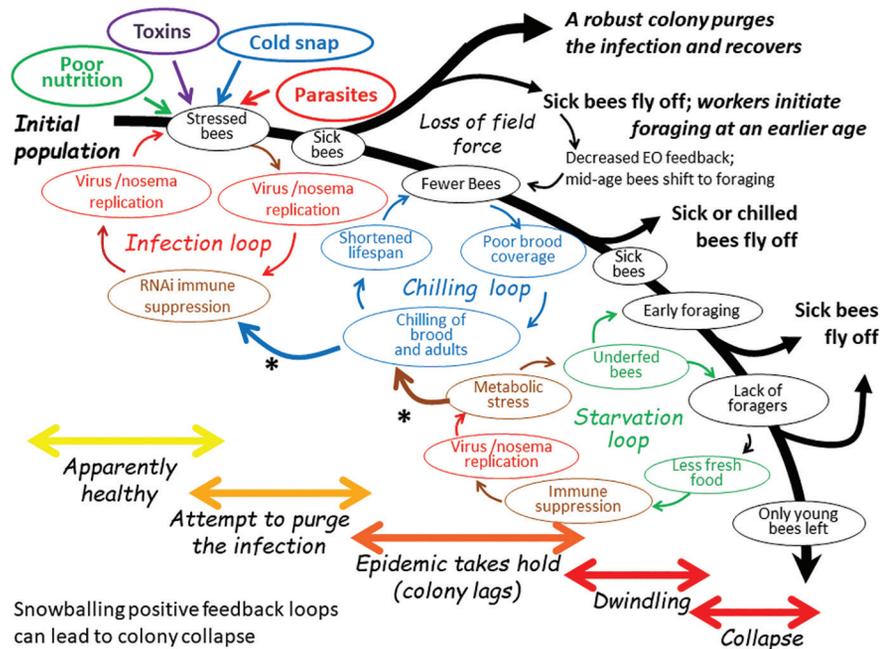
Diagnosis is a tricky thing. Becoming a good diagnostician requires years of training and experience, knowledge, the curious inquiry of detective work, and the ability to see the big picture. Coming up with the “correct” diagnosis is a challenge to all doctors, including veterinarians. With colony loss being such a vexing issue in the beekeeping industry, beekeepers certainly share correct diagnostic challenges to identify and understand what happened to lost hives.

Medical conditions and diseases are diagnosed by meeting certain set criteria for diagnosis. For most conditions or diseases, this includes finding **clinical signs consistent with the disease or condition and a positive diagnostic test.** We rarely diagnose disease in asymptomatic patients, as it is hard to find something that does not present itself.

In beekeeping, we often use state and national beekeeping surveys to

study reasons for colony loss. I would encourage beekeepers to take the time to fill out surveys like The Bee Informed Partnership’s (BIP) annual survey as accurately as possible. Better data in equals better data out, which will benefit all beekeepers.

However, all scientific surveys, while helpful, have innate limitations. With beekeeping surveys, returns are often 10% or less of all beekeepers, and reasons for losses are often educated guesses from a variety of types and levels of beekeepers. Diagnostic testing may or may not be employed to confirm disease diagnosis. Sometimes survey questions can be hard to answer because they do not apply to your situation. I recently filled out a survey that did not give an option for no loss over Winter. I was forced to give a reason for loss even with none. Reasons beekeepers select for colony loss may be somewhat ambiguous with options like starvation, Winter, Summer, queen issues, weather, and various environmental hazards (chemicals, pesticides), other, and I do not know. For “starvation”, ok but why really? Were they weak in the Fall, full of unchecked mites, did you leave them 40-80lbs of honey? For “winter”, ok, but if all bees died because of Winter, we would have zero bees in one year – so what is the real reason/s? Look for more than one.



Snowballing positive feedback loops can lead to colony collapse
© Randy Oliver 2010

Randy Oliver developed a nice loop diagram showing how different underlying causes of colony loss can intermingle and have compounding effects. <http://scientificbeekeeping.com/sick-bees-part-2-a-model-of-colony-collapse/>



*Is this dysentery?
Nope, just a long
February without a
colon cleanse!*

Sometimes even “diagnostic” words do not help much. In medicine, we have a sophisticated sounding term for “I don’t know”, *idiopathic*, literally meaning the disease makes an idiot of us. In beekeeping, it is used to describe idiopathic brood disease. We still have much to learn.

Last Summer I lost a hive. It was a split that I made from a very robust hive at Spring extraction. The hive made a new queen, she made it back from mating and was starting to lay, when the Summer dearth and the worst drought in decades hit. I tried to feed in-hive sugar water to all hives, reduce entrances, but to no avail. The stronger hives took out this new queen and her colony by relentless robbing. So, what killed this hive? Robbing? The dearth? The drought? A beekeeper who gambled with a weaker split in a stronger yard and lost? Many would say “robbing”. But what caused the robbing? All these things coming together contributed.

The problem with diagnosis is it is usually **not just one underlying cause**. In most cases, it is multiple things that bring down a hive or any animal. Co-morbidities. We all now know this word “co-morbidities” due

to COVID-19 but how underlying conditions weakens any animal or human to disease or death has been well understood for a long time. Every stressor can contribute to colony loss. One stressor may not take out a healthy hive but persistent, multiple stressors over time certainly will.

So how can we, as beekeepers, intervene? Maintain healthy colonies by understanding their biology, providing good nutrition, biosecurity, and routine parasite control (*Varroa*), and adequate shelter (ex. dry, well-ventilated hives). These basic principles apply to maintain the good health of all animals and humans. Strive to develop a keen diagnostic eye so you will know when to just monitor and when to “go in after the cork”.

...When I returned the wine cork (still showing identifiable markings on the cork) to Red’s pet parents, they were amazed because they had not drunk any wine for over a month. But this little fact further explained the case history, corresponding to the start of Red’s stomach issues. Post-operatively, Red recovered nicely since we had discovered the ultimate root of the problem. **BC**

JZ’s BZ’s
866-559-0525
to order
Cups, Cages
& Cell Bars



We now have Bears!

Plastics Packaging Concepts, Inc.
A full line of honey containers to get your product noticed!
Bears in 12oz and 16oz, Angels in 12oz capacity with John 3:16 engraved on the back, skep bottles, and more!
Caps and custom printed labels available with bottle orders.
Call (816)862-8295 or visit www.ppc3.com to see our full line.

Big Island Queens Olivarez Honey Bees/Big Island Queens is seeking motivated beekeepers to join our Hawaii team! Experience preferred. Self-motivator and ability to work in a team environment a plus. Positions are full time, salary based on experience. Great Benefits Package. Prior work history and references required. Advancement opportunities available. Submit resume to info@ohbees.com or Olivarez Honey Bees Inc/Big Island Queens, P O Box 847 Orland Ca 95963, Fax: 530-865-5570, Phone 530-865-0298

Sailor Plastics
sailorplastics.com
1-800-380-7429

*Visit our website
for all of your
bottling needs!*