

*“(Burn baby burn) burn that mother down y’all  
(Burn baby burn) disco inferno  
(Burn baby burn) burn that mother down”*

— *The Trammops*

By now you should have licked your wounds from Beekeeping 2020 and are storing away equipment from dead-outs. It’s at this time that we are reminded of the old joke: “There’s a lot of money in beekeeping... I’ve put heaps of it in there myself!” Even with only a few hives, we have invested a notable amount of money, as well as time and effort, in our equipment.

I received some readers’ e-mails this month that touched on this topic. Someone in southcentral NC had been in a long-running fight with wax moths and lamented that he was weary from burning infested frames and boxes. Another beekeeper on the West Coast had recently come into possession of some established hives that contained bees exhibiting the symptoms of Deformed Wing Virus. She wanted to know if bleach, burning or both were necessary in order to cleanse the equipment.

The willingness to sacrifice equipment to the firepit in order to ensure the health of the creatures that have been entrusted to us is definitely laudable. We certainly don’t want to allow contamination of our other colonies or the colonies in our neighborhood belonging to our fellow beekeepers. However, a match is rarely called for as a remedy, especially here in North Carolina.

### **Pest damage**

The larvae of Small Hive Beetles (SHBs) and wax moths can turn beautiful, valuable comb into a worthless mess. Wax moths will even hollow out small divots in our woodenware at the site where their cocoons are attached.

At first glance a frame that is decimated by pests looks like a total loss. You may not even want to touch it, let alone reuse it. But don’t throw the baby out with the bathwater. Pick off wax moth’s webbing (it looks like grey cotton candy that has been lost behind the sofa for a few years). Run the water hose over comb that



The end bars of these frames are covered with wax moth cocoons and frass (poop). Notice the shallow divots in the wood where cocoons have been removed. Are these frames ready for the firepit? Or are they simply battle-scarred veterans with many years of life remaining?

SHB have covered with fermented “snot” (gross, but if you’ve had it, you know what I’m talking about). Chances are, there may be a large amount of basically decent wax comb remaining. Given back to a strong colony, the bees will make it good as new in short order. If you want to be extra cautious or if you intend to store the frames for a while before reusing, freezing them for a couple of days and then storing in a bug-tight container will ensure that no lingering eggs or larvae survive. For another option for long-term storage of many frames, see October 2020’s [“A New Old Tool to Fight Wax Moths”](#).

Even if no comb remains at all, the frames can easily be reused. Just use your hive tool to scrape off the old nasty bits. Wooden frames designed for wired-wax foundation have a removable cleat on one side of the top bar. Pry it up with your hive tool, insert a new sheet of wax foundation, tack the cleat back in place and bingo, that frame is back in business. If the frame has horizontal wires, you probably can reuse them as-is; simply weave the new sheet of foundation around the existing wires.

Wooden frames with plastic foundation are even easier to deal with. Firmly hold the top and bottom bars with both hands and use your thumbs to pop the foundation out of the upper and lower grooves. That’s it.



Wax moth larvae have completely consumed the comb in this frame, leaving only the wires, webbing and frass. Ironically, that makes cleanup very easy! New foundation can be installed and the frame will continue being of value, saving the beekeeper a couple of bucks in equipment costs.

Plastic foundation can be scraped clean, painted with a layer of melted wax and reused. It will be even better than new if you apply a generous layer of wax. Or if you are a Daddy Warbucks beekeeper, you can buy new wax-coated plastic foundation and just pop it into the old frame.

I have never seen SHB or wax moths do life-ending damage to boxes. They are not plutonium-ridden death-ninjas who leave toxic booby-traps for future generations of bees who come anywhere near the proximity of where they used to live. They are just bugs. If they are in boxes without comb, they won't survive. Not only will they have nothing to eat, if the boxes are in sunlight the eggs and larvae will dehydrate. If the boxes are reused to house a strong colony, those bees will keep the pests under control as long as the beekeeper has a basic understanding of their lifecycle and habits. Reinfestation, if it occurs, is almost certainly attributable to the same reasons the hive was originally infested, not the fact the equipment was reused. See May 2015's "[Love a Beetle?](#)", September 2015's "[Pity the Poor Wax Moth?](#)" and October 2020's "[A New Old Tool to Fight Wax Moths](#)" for more information.



Although the comb in this frame is a bit battered by moths, it is mostly intact. This one can be lightly cleaned of webbing and given back to a strong colony for it to restore to pristine condition.

### Varroa-associated viruses

What about Deformed Wing Virus and all of the other viruses associated with Varroa mites? Even though we don't know a whole lot about these particular viruses, we do know that viruses, in general, do not remain viable for very long outside of a host. Normally their lifetimes outside a host are measured in hours, sometimes days, but due to their very nature they cannot survive for very long unprotected. And sunlight greatly shortens their viable lifetime.

Taking all of that into account, there should be minimal risk of viral reinfection via reusing comb, frames and boxes. To be cautious, you could let old equipment sit vacant, without bees, for a few weeks. After that, there should not be any viable viruses left.

Also keep in mind that viruses require vectors to move into honey bees. While some honey bee viruses such as Sacbrood can be passed around by bees feeding brood and each other, the Varroa-associated viruses are spread by the parasitic activity of the Varroa mite. Remove the vector (mites) and there should be no risk from reusing equipment; it isn't the equipment that is the culprit in the spread of these diseases.



This frame was chewed up by squirrels while in storage. Maybe the end bars and top bar can be salvaged for parts, but otherwise we finally do have one that is past saving!

### An important caveat!

The whole thesis of this article is that setting fire to perfectly good equipment should not be a beekeeper's go-to remedy when pests or diseases kill off a colony. There is, however, one malady for which fire may very well be needed... if you aren't in North Carolina.

American Foulbrood (AFB) is a spore-forming bacterium that is very contagious and very deadly for honey bee colonies. The spores are extremely tough, able to withstand most antibacterial onslaughts. We aren't sure how long the spores live on old equipment, but samples from around 100 years ago are still viable. So it is safe to say the spores live longer than you will.

The standard recommendation in the US for AFB is to depopulate the hive (i.e., kill the bees) and burn the equipment (boxes and frames). However, North Carolinians have another option: the empty equipment can be treated in the NCDA&CS ethylene oxide chamber, the same one that was previously used by NASA to guarantee that moon rocks were thoroughly cleansed of space-borne pathogens. The small charge per box is much less than the cost of new equipment.

Regardless of which method you end up using (fire or ethylene oxide chamber), always call your regional [NCDA&CS Apiculture Inspector](#) if you have any reason to suspect that



Even though we hate to see it, we must admit that wax moth cocoon divots are a great example of nature's beauty!

a colony has American Foulbrood. In fact, the original basis for NC Apiary Services' very existence was to protect North Carolina's honey bees from AFB. Their professional consultation services are free, already paid for by your tax dollars. See October 2015's "[Wisdom Wins Out Over AFB Treatments](#)" and June 2018's "[Who Ya Gonna Call?](#)" for more on AFB and the NC Apiary Services department.

### Don't get me wrong...

Please don't take these remarks as an encouragement to avoid spending money on beekeeping supplies! The reason the joke in the first paragraph makes us all smile is that it is true – beekeepers seem to love to spend money on their hobby. But we don't need to spend it needlessly! There are always new gadgets, gizmos, fancy queens and so on to spend our hard-earned money on without having to re-buy perfectly good stuff that we already have. See December 2018's "[Gadgets, Gizmos and Got-to-Haves](#)" for suggestions. And if you find that reusing frames and boxes instead of burning them leaves you with more money than you know what to do with, make a donation to the [NCSU Apiculture Science Fund](#)! We all benefit from that!

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