

## Buzzword Honey: Frame Replacement Process

I am a beekeeper that considers routinely rotating older darker brood frames out of a hive to be a sound management practice.

There are several reasons for replacing older frames:

- The cycles of brood leave behind a layer of cocoon reducing the size of the cell
- The various toxic environmental pollutants that are brought into the hive by both the bees and the beekeeper permeate the comb and are not in the best interest of developing larva.
- There is also reasonable argument supporting the buildup of virus and bacterial diseases in the older wax.

While I have no information to prove or disprove any of this, simply looking at a brood frame after 4 – 5 years of use is enough for me to agree that frame rotation is a reasonable management tool. I do not clean and reuse old frames simply because purchased in bulk, frames are a low-cost item and cleaning them to a point where new foundation will fit is time consuming and very messy. Using a fame assembly jig and air tools, I can build 10 frames in 10 minutes or less. Whereas cleaning 10 frames would take me 30 to 40 minutes.

How do I keep track of the frame's age? Simple; I write the year it was placed in the hive on the top bar using a wide felt-tipped permanent marker. I write out the year 2017 for example but I have seen others simply use the last number, for this example, a 7.

I use all medium frame equipment so I can move any frame to any position in any super. Typically I like to rotate on a 3- to 4-year schedule. Therefore for spring of 2017, any brood frame dated "2013" or "2014" is subject to replacement. I would not remove frames that have brood, but frames that have old capped crystallized honey or pollen would be removed. Also, I would not disturb the brood nest by splitting it with new frames.

I do my frame replacement in the early spring when the bees are typically in the top box. The normal practice is to reverse the bottom super (next to the bottom board) to the top position. This effectually adds empty comb space above the cluster for the bees to move into. Because I don't use queen excluders, a good bit of my honey extraction is from frames that have had a small amount of brood in them, before they are filled with capped honey. I keep the frames of comb in cleaned and protected supers, ready to go on the hives when needed.

Because the natural progression is for the brood to move down during the summer and up during the winter, the bottom super typically has the older frames in it. In March, I move the supers with clean frames from last year's extraction to the bee yard, staging a super next to each overwintered hive. I need a warm day for this adventure as I will be separating the supers.

Normally, I over-winter with 3 – 4 medium supers on each hive. The process is simple; I remove the top cover, inner cover, top box, and next box until the bottom box is removed from the bottom board. I then clean off the bottom board (or replace it if not in good repair). The bottom super is checked for bees or brood then set to the side. The two supers with bees (or three on a four-super hive)

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are replaced in the same order and orientation as before. It is a good time to pull a frame to see how brood production is going. The empty super I brought to the bee yard is placed on the top and the inner and top covers are put back in place. With this process I have replaced 25% - 33% of the frames with known-to-be cleaner comb. I can also add a feeder and protein supplement during the process.

After going through all the hives any weak ones are noted, dead outs removed (if not previously removed), and spring re-queening or nuc production plans can be made.

Although it is a good bit of work and rather arbitrary, I have not found any serious down side to this process. The supers I removed are sorted out, cleaned, and repaired. Any out-dated frames are discarded. Any usable frames are returned to storage for nuc production, which for me is in April.

I like to start the honey flow with a super that has a good bit of new frames with wax foundation or even all new frames with foundation. This may cut into my honey yields somewhat but I have found that a bit of March feeding with both sugar syrup and protein supplement will create a lot of April bees eager to draw comb on the blank foundation.

The hive is cleaner, space for the queen is added, and blank foundation gives all those newly emerged April bees something to do.

What could be better?