

*"I continue to be drawn to clarity and simplicity. 'Less is more' remains my mantra."*

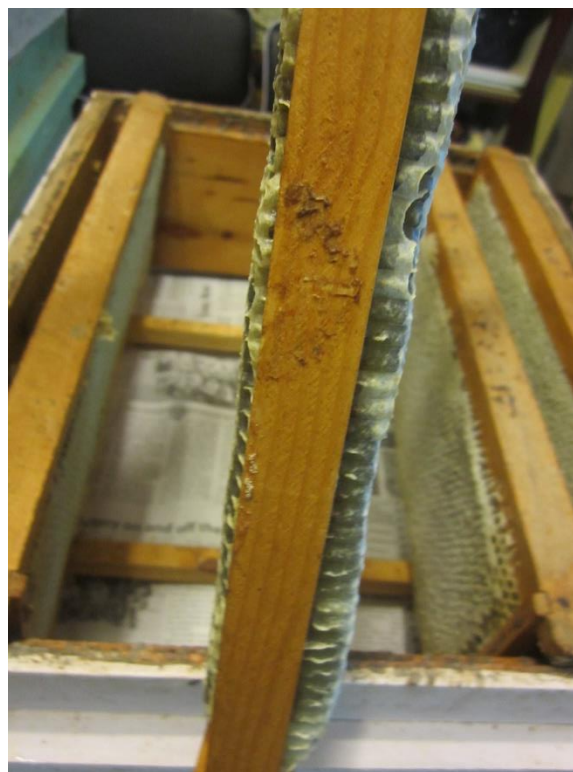
— *Stephane Rolland*

Early in my journey as a novice beekeeper I came across the advice to only use nine frames in a ten-frame honey super. For those who use eight-frame equipment, the corollary is to use seven frames in an eight-frame super. At first glance, this seems odd. Further thought makes one wonder if maybe it is a good idea after all. But is it really? And if so, why? Most great ideas in beekeeping, and life, are either worth doing or are clever but not genuinely helpful. Which is it?

There are two benefits of 9-in-10 that are often cited, and one that I experience myself but is rarely mentioned. In what I consider reverse order of importance, they are:

1. My extractor holds 9 frames. If my honey supers also hold 9 frames, everything harmonizes much better on extracting day. One box equals one extractor load. This benefit is quite nice but I haven't seen it mentioned in literature.
2. With fewer frames enabling wider spacing, bees draw out the honey comb cells farther. The deeper cells extend beyond the edge of the top bars. That makes cutting the caps easier, e.g., there is less chance of shaving off a sliver of wood from the top or side bars along with the wax caps.
3. Related to #2, because the bees draw out honey cells farther (deeper) in a 9-in-10 arrangement than a 10-in-10 configuration, they are making more efficient use of wax. Consider the fact that two one-liter Coke bottles have two caps and two bottoms, whereas a single two-liter bottle holds the same amount of Coke with one cap and one bottom. For honey in wax cells, the same logic applies. Wax is biologically expensive for bees to make so saving wax is a worthwhile goal.

There is a fourth benefit that incorporates and then goes beyond #2 and #3. It makes the



This ten-frame honey super has only nine frames. Notice how the cells are drawn out far past the edges of the frame, making uncapping very easy.

choice quite obvious. Rather than blurring out the answer, let's sneak up to it.

All of this talk of economizing on bee effort and resources is great, but what about the beekeeper's effort and resources? If savings on the bees' side is more than offset by added costs on the beekeeper's side, then that's a false economy. The increase in the beekeeper's expense could be in the cost of more frames and boxes that are needed to get the same harvest. However, if we get just as much or more honey from a 9-in-10 box as we do from a 10-in-10 box, then hurray! We have a winner all around.

At my house, my honey super frames are defined by the width of the ears on the end bars; they are 1-3/8 inches wide. Placed chock-a-block beside each other, ten such pristine frames are 13-3/4 inches wide, leaving an ample amount of wiggle room in the interior space of a standard 10-frame box (1/2 inch excess on each end of the 14-3/4 inch wide cavity). We all know that extra space tends to

disappear over time as the frames are propolized but we'll focus on the 13-3/4 inch span of frames for this example. When we get to the end, we'll see that trivial differences in the math don't affect the conclusion.

If bee space (the space required for two bees to pass each other back-to-back) is 3/8 inch, then our ten-frame span requires 3-3/4 inches of emptiness, leaving us with ten inches of comb for storing honey.

Let's put nine frames in the box instead of ten. The bees will draw the honeycomb out to the limits of bee space, which will now take up 3-3/8 inches (removing a frame removes a bee space from the total). The honeycomb is now 10-3/8 inches wide, an increase of 4 percent in storable space for honey. So not only is the honeycomb on those nine frames deeper and thus easier to uncap (the width of one frame is distributed evenly across the nine, pushing the caps out beyond the edge of the top bars), the total honeycomb width is a bit more than it was with ten frames.

At my house, I consistently get at least 35 pounds of extracted honey per full medium honey super. A 4% increase would be nearly 1-1/3 pounds. At \$15 per pound, that's \$19.95 more per super. Add in the cost of a medium frame and foundation (around \$4.50) and 9-in-10 equals \$23.45 more in my pocket per box, everything else equal, compared to 10-in-10.

The reason this works is that honey bees draw out honeycomb cells to accommodate bee space. Removing one frame creates one bee-space worth of extra room that can be used as honeycomb storage. That's the simple fact that makes this scheme a winner. We can store more honey and at the same time use less equipment. That doesn't just make sense, it makes dollars and cents.

### Step by step

If you want to try nine frames in a ten-frame honey super, you must start with drawn comb. Don't put nine frames of foundation in a ten-frame box and expect the bees to follow the comb-building blueprint that you have in mind. With all of that empty space between



A 9-frame spacing tool makes it easy to spread nine frames evenly in a 10-frame box. A 7-frame version is available for use with an 8-frame box.

frames, bee space is violated and the bees will very likely fill it in creative ways. For example, they may draw comb on both edges of the top bars instead of on the foundation. But with drawn comb, the space between the comb isn't enough to draw a whole new comb, so the bees will instead extend the walls of the wax cells into the empty space. Once you have ten good, well-drawn, empty frames of honey comb, you can put nine in a box instead of ten and ask the bees to follow the plan described above.

### Why not one frame in a ten-frame box?

If nine frames in a ten-frame box is such a great idea, why not eight frames? Or seven? Or one? If it were possible for us to coax the bees into cooperating with that scheme, it would have the same incremental benefit that I have described: we would get proportionately more honey both per frame and per box and we could use less equipment. But the bees aren't going to go along with it. The wider the spacing of the frames, the greater the likelihood that the bees will insert comb between them according to their own whims. I've heard anecdotes about beekeepers being successful with eight frames in a ten-frame box but I don't personally know anyone who has pulled that

off. However, 9-in-10 is a very reliable and popular technique.

**Does this work in brood boxes too?**

Although 9-in-10 is a great idea for honey supers, it doesn't help one bit in brood boxes. One reason is that brood cells are all the same depth regardless of how much space is available to draw comb. They are the depth of one adult bee. Period. Adding space between frames will not result in deeper brood cells, so removing one frame from the box will remove one potential frame of brood. Furthermore, the bees will extend the honey cells that are along the tops and sides of brood frames, making it much more likely that the comb will be ripped open when pulled from the box, dripping honey between the brood frames and perhaps inciting a robbing incident. So "leaving more room to maneuver" simply doesn't work; the goal is thwarted by the bees. It is far better to attempt to keep the brood frames cheek-to-jowl in the box with no space between them.

**Helpful tool**

In case my description isn't obvious, when we remove that tenth frame to use 9-in-10 we should space the remaining frames evenly within the box. A frame spacing tool helps with that, allowing the frames to be exactly the same distance apart. Or you can do as I do and just line them up by sight.

**Bottom line**

I've used 9-in-10 in my honey supers for many years. I suggest giving it a try. We can get more honey from less equipment, even more than what is "lost" by the removal of one frame. But be mindful of bee space rules; neglecting those can turn a fat, easily-extracted box of frames into a horrific mess!

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*Use less equipment to get more honey and therefore make more money! Sound too good to be true? Nope, this one is for real!*

