Is Foundationless the Way To Go?

By Kip Glass

Everyone now is wanting to go "Foundationless" when establishing their bee colonies. They are hearing it is healthier for the bees, it cuts down on mite problems, and is just the new way to go.

I would like to offer my thoughts about this and show some pros and cons.

One of the main reasons, people are wanting or saying it is healthier for the bees, is because the wax foundation or wax coated plastic frames have wax from the large commercial operations that have coumaphos, fluvalinate, or amitraz residues from the miticides used to control the varroa mites. Studies have shown that these fat soluble chemicals linger in the wax and are causing reproductive issues in the queens and drones in the hives. A great reason not to use wax foundation.

I always refer people to Randy Oliver's website; www.scientificbeekeeping.com . Randy Oliver is a world renowned biologist that has been a commercial beekeeper for many decades. Randy researches and refutes studies and articles that usually have no basis for what they say. He does a lot of his own research too. So please, extensively go through his website for knowledge on some of the things I am about to cover.

Another reason people want foundationless; bees will more naturally build the 4.9mm cells that is more natural to them and will help control mites. This is going to be a long explanation so bear with me. People have gotten misguided on thinking the 4.9mm cells help control varroa mites, but in reality the theory was for tracheal mites. A smaller bee raised in the smaller cells have smaller spiracles (breathing tubes) along their abdomens. The microscopic tracheal mites could not enter these smaller spiracles, thus keeping the tracheal mites under control. In reality, tracheal mites have not been a problem in nearly 20 years.

Another theory, and somewhat viable one, is that the worker bee span of 21 days from egg to emerging as an adult is somewhat less in the smaller 4.9mm cell raised bee. Maybe 20 days, and in some new research that is correct. This ties in with the life cycle and development of the varroa mite. A phoretic (adult) Varroa mite, enters a cell of a bee larvae that is just minutes away from being capped over to pupate. The mite will hide in the bottom of the cell and when finally capped over, she will come out and the first egg she lays will be an egg that hatches out into a male mite. The next successive eggs she lays, over a matter of days, is 3 to 5 on average that will be female mites that progressively mate with that first male mite, if they have time to mature. The longer the phoretic Mite that entered the cell can lay, the more mites can mature, mate and will emerge and can then continue the cycle. More mites can then cause an explosive infestation in that colony spreading viruses and weakening the colony.

This is why Varroa like drone brood. Drones cycle from egg to emerging adult is 24 days, a longer period of time for the laying mite to develop more emerging mature offspring.

So the theory is, the shorter 20 day period, as opposed to the normal 21 day, will lessen the number of mature offspring coming out of the emerging brood. Key word, "lessen", but it doesn't eliminate it. Randy Oliver covers this in some of his discoveries and testing.

Back to the issue of drone brood. I have found, and most people that do foundationless, see more drone comb when the bees make their own combs. Why??? When bees are in the mode of making their best and fastest combs it is usually in spring when the nectar flows are at their strongest and usually, during this time, the colony is also in "SWARM" mode. Bees in swarm mode instinctively raise drones so there will be male bees around to mate with the new emerging virgin queens after the old queen leaves with the swarm.

I have seen with my foundationless experiments, frames will be all worker comb to one third drone comb to some frames all drone sized comb. That is just an enticement for the Varroa.

Another discouragement I want to offer to the new beekeeper. If you don't stay on top of the work that your bees are doing in drawing out these foundationless frames, constantly correcting any errant combs not inline; you end up with a mess. Most that transition put foundationless frames between already drawn straight combs to help guide the bees. You will sometimes have to remove larger sections that they just don't get right and it can be frustrating to the new beekeeper to do this.

I purchase unwaxed plastic Rite Cell© foundation from Mann Lake. This foundation that has no wax and I roll on my own chemical free wax from a heated electric skillet. My plans are to get some foundation roller mills and make my own wax foundation and insert into wired frames.

So as your experience level grows, I encourage you to experiment if that still is a way you see you want to go. It costs you nothing in foundation costs and is cheaper.

Good Luck!