

OVERWINTERING OF BEES IN THE SAN FRANCISCO BAY AREA

INTRODUCTION

It seems that beekeepers and beekeeping books often offer differing and even contradictory information. One reason for this is that there are actually many methods that work. Being self-centric, people assume that if their method works, it is the "right" way and they don't look further to see that there are may be many other "right" ways. Bees are especially adaptable and resilient, thus there are many methods that can and do work, sometimes in spite of our efforts if not because of them. In order to really understand what is best for the bees, we'd need to observe a wide variety of individual colonies managed in a wide variety of styles, climates and hive bodies and compare notes.

Most beekeeping book authors assume that winter is the same for everyone as for them. They neither recognize or acknowledge the bio-regional nature of beekeeping and that what works in Maine is going to be different than what works in Florida. I don't know why they don't bother to compare notes with beekeepers around the country. I guess it is a natural human tendency to assume that our own experience is a global one, but it does a disservice to the wider beekeeping community. I for one, have no idea how to overwinter bees in Iowa, but as a native of the San Francisco Bay Area . I do know at least something about what to expect from the bees in our winter.

I have been keeping bees in Oakland for 15 years. I do not consider myself an expert or that my word is god in any way. But I do feel I have a good grasp on the seasonal cycles and how most colonies will act in our climate. So for what it is worth, I will share my observations and recommendations below. If you have more to add or contradictory experiences, by all means I want to compare notes. We benefit from contradictory information. Even though it can be confusing, especially for beginners, ultimately it fills in the blanks in terms of the various ways the bees can act and how our attempts to support them work or don't work for us. For most of us, the bees are endlessly fascinating and ultimately mysterious and thus more input can only be better.

WINTER CYCLES INTHE BAY

The bees will forage, store nectar and make honey through October. They will continue to supplement stores by foraging through the winter on any day that is warm enough to fly (over 57 degrees), of which there are plenty. Of course, the success of their foraging is dependant on available resources of nectar & pollen. At some point perhaps I, or another Bay Area beekeeper will log what blooms through winter, so we can make a point of growing those plants. I know for sure that borage will flower all winter and that eucalyptus is one of the things earliest available in spring.

In northern climates where there is snow and temps below 57 degrees for days on end, the queen stops laying. There can be months of no brood production, where the bees huddle together just trying to stay warm enough to survive. Their bodies go into a partial dia-pause -- all bodily functions and needs slow down. This does not happen here in the Bay Area--I have never seen zero brood production in my hives, even in the middle of what we call winter.

The most difficult time for our bees seems to be January. This is when I have seen the most die-off, especially in a mild winter, like 2012. How can this be? In a milder winter, brood production is higher , thus population is higher, but due to lack of rain, food resources are less. Population to forage ratio is skewed and the bees work themselves to death trying to get enough food to support the population.

MANAGEMENT

I harvest my last honey around the end of in September, leaving them to continue to store and forage what they can through October. It is always best to leave bees enough of their own honey to make it through, but if you are going to feed sugar water, you want to start AFTER your last harvest, or you'll be harvesting stored sugar water instead of honey. There is even the danger that they don't use all the stored sugar water and that you will be harvesting some of that come spring--beware.

I do my last inspection and close the hive for winter before that gentle cold snap in early November (sometimes earlier, sometimes later). Then, I monitor the hive by watching activity at the entrance on the warmer days through the rainy season. Given that the bees are flying, the next time I open the hive is usually on one of those sunny days in January. Unless I think the bees are in danger, I don't want to destroy the propolis seal. When I do my January inspection it is to ensure they have enough food to make it through. If there is little, especially near the brood area, I feed, either their own honey if it is available or sugar water if that is all I have for them (for more on this see feeding below).

INSULATION, VENTILATION & OTHER WINTER HIVE CONCERNS

In colder winter climates, beekeepers do all kinds of things to keep the bees warm. They wrap the hives, use follower boards, place hives close together so some walls are shared and thus more heat is kept in. None of this is necessary here in the Bay Area. There are a number of beekeepers who promote the use of follower boards--including much-beloved natural beekeeper, Serge Labesque. In my experience it is ventilation, not insulation which is the biggest problem here. Especially in top bar hives, where there is not an additional inside cover, condensation build-up can really tax the bees --nothing worse than cold drops of water dripping on you all winter long. Plus, the moisture build-up can cause mold in the nectar and other stores at the back end of the hive where the bees are not tending it. The bees will clean this up come spring, but I imagine that mold spores could also upset the ecology of the hive when the bees are at their most vulnerable.

In my top bar hives I keep a ventilation opening at the end of the hive (1/8" screen) all winter long with no follower board. I have even seen top bar hives with fully screened bottoms the length of the hive that do just fine without being closed up in the winter. The best hive design for a winter combination of insulation and ventilation is the Warre hive. Both the thicker walls and the "quilt" box that sits on top of the hive body work to mimic what the bees would choose in nature (a hollow of a tree for example). The quilt box is filled with wood shavings which insulate while also absorbing the moisture and condensation from the warm bee bodies inside the hive. A makeshift quilt for a Langstroth hive can be fashioned from a top feeder, or a shallow box with cloth stapled over the bottom and filled with wood shavings. Put the lid on top of that.

Finally something that is vital here in the East Bay that is not as much of an issue in other areas is protection from our vigorous Argentinian Sweet Ant population. In the summer, when the colony population is high, the bees can easily cope with an influx of the ants. But in the Winter, the warm, dry hive, with all of its honey is highly attractive to ants and the small already struggling population of bees is challenged to protect against them. So some sort of moat system, tanglefoot or what have you is vital here in the winter.

HONEY HARVEST

How do we know how much honey to leave our bees? It is always a guess, because we have no idea what the winter will be like. Bees use at least a pound of honey a day in the summer and a half pound when the colony is small in the winter. So this is why in real winter climates they tell you to leave 50-70 pounds--a half pound a day for 3-5 months of days below 57 degrees. In the Bay Area, there are plenty of winter days the bees can forage, though there is also diminished nectar & pollen resources.

In my top bar hive, how many full paddles of honey I leave also depends on the amount of honey stored above the brood. If there are 3-4 inches of honey on each brood bar, I leave them 3-4 paddles of full honey comb. If there is less than that, there are also less honey stores, so I leave them everything.. I do remove any combs towards the back of the hive that are nectar only as this will mold over the winter. You can harvest this nectar, but you will have to refrigerate it or it will mold or ferment (as a rule of thumb to prevent this only harvest comb that is 2/3 or more capped honey). You could also use it to make mead and the storage problem is solved. In a Lang you might leave them one full super or at least 6 full shallow frames beyond what they have in their brood box.

In the top bar hive I have seen colonies starve, even when there was honey in the back of the box. This is because in the winter, the clump of bees prefers to move vertically (upwards) . If the honey is 4 bars away, in a horizontal position from the clump, they will not find it. I have not done this, but it is said that in a top bar hive you should make sure the clump of bees is on one end of the hive, so they can gradually move across the honey

stores. If I were worried and in a more northern climate. I would move things around and put the bees at the back end of the box and the honey between them and the entrance to ensure they would find the available honey, while moving sideways to access the entrance (given that you are using an end entrance which I highly recommend).

FEEDING

If you do feed, start in the Fall after your last honey harvest and feed a more concentrated syrup. The less moisture you introduce to the hive the better. So mix your syrup 3:1 or even thicker. Better yet, you can simply feed dry sugar..

If you find stores are low in January, definitely feed to help them get through the winter. In my top bar hives I sometimes find stores reduced in the brood area, with full paddles of honey left at the back end,. If this is the case, I simply plunk a bar of honey down on the entrance side of the brood. If there are no honey stores left, my first choice is to feed them their own honey. This is easily accomplished in a ziplock bag. Simply fill the bag with honey, push out the air, use a pin to poke some holes in it and place it below the brood clump. If I feed sugar water in winter I usually do so with an end feeder (for the top bar hives).

If you want to feed pollen substitute to help with brood production, the only time the bees will really go for it is in early spring. Otherwise the substitute will just mold. Feeding in early spring helps with population build up. Most commercial pollen substitute is made with GMO soy. You can mix your own, more organic recipe like this: 1 part organic soy flour or meal, 3 parts sugar, 3 parts brewers yeast, 1-3 parts honey or water to moisten into a semi-form patty.

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"When in doubt, just add compost."