How this one beekeeper is keeping his hives alive

Have you ever wondered what other beekeepers are doing to prepare their hives for winter? I know I have and when I talk to beekeepers that have lost some or all of their hives I am especially interested in learning what they did or did not do to prepare their colonies for winter. summer. Quite often I sell hives to people that have lost hives and I often try to determine why their colonies died and what the beekeepers did or did not do to prepare their hives for winter. Quite often new beekeepers will assume that their colonies died of Colony Collapse Disorder but often it becomes apparent through discussion that the colonies starved to death or died for some other reason because the beekeeper did not do all that is possible to prevent it.

Most of the people reading this are probably experienced beekeepers and what I have to say is not at all new to you. After keeping bees for about Thirty years I am still learning and still have more questions than answers. Let me tell you what I do and it may serve to remind you of something that you may want to consider doing yourself that you are not doing already.

The following is a partial list of things to consider:

1. How good is your queen?
2. Kill the mites
3. Prevent Nosema by using Fumagilin
4. Feed the bees
5. Insulate the hives
6. Provide some ventilation
7. Provide an upper entrance
8. A larger top cover
9. Other misc. items

Item #1 Throughout the summer, especially later in the summer, make sure the brood pattern is good as this is an indication of the quality of the queen. We don't want her to die over the winter or not build the hive up well in the spring of the year. It is better to replace the queen in the fall than in the spring. I have found that good queens are sometimes hard to find in the spring . Do this in plenty of time so that you can make corrections in case something goes wrong. Most likely everyone is already doing this. Try to keep track of how old the queen is. Keeping a journal is a good thing and the notes may come in handy.

Item #2 Fellow beekeepers. <u>Killing the mites</u> <u>is the single most important thing that you can do to keep your colonies alive</u>. In early July, or as soon as the honey supers are off the hive I begin a <u>treatment for mites.</u> The mite levels in my hives are often getting pretty high at this time of year.
There are a lot of beekeepers that do not use any chemicals in their hives and I certainly respect that and wish them well but this is about what I have been doing, not what I think everyone else should be doing. I look forward to the day when we do not have to put miticides in our hives.
It is my belief that the mites are one of the root causes of most of our beekeeping problems. In brief, they weaken the bees by weakening their immune system making them more susceptible to other pathogens and they spread viruses.

My choice of miticides at this time is "Api-Guard" because it is made from Thymol, a natural ingredient, the mites are not likely to develop an immunity to it and it is very easy to use. By the way, I use screened bottom boards and have the tray in place when I treat for mites. This year I will be trying other miticides as well.

Item #3. Nosema, both Nosema Apis and Nosema Cerana

For the prevention of Nosema I use Fumagilin. The directions on the package enclosure instruct us to dissolve one rounded teaspoon of Fumagilin in a few ounces of water and add this to one gallon of sugar water mixed 2:1. Each "two deep" colony should receive two gallons of this mixture. The bees will store this medicated syrup and it will gradually be consumed during the winter.

Nosema is a microbial disease caused by microorganisms in the digestive tract of the honeybees. If you see a large number of weak, crawling bees at the entrance of the hive or if the front of your beehive is splattered with bee droppings, this is a good sign that they have Nosema. It could be present in your hive without presenting a common symptom.

Item #4 Feeding the bees.

I personally, am not good at determining if the bees have adequate honey stored for the winter by lifting the back of the hive. I know that many beekeepers are able to do this.

What I do is feed the bees 2:1 sugar syrup in the fall, usually starting with the syrup I have given them to administer the Fumagilin. Never do I use high fructose corn syrup, only granulated sugar from the grocery store. I will know the bees have enough when they stop taking it at a rapid rate from the feeders. Give them all that they will take. Remember, sugar syrup is cheaper than losing a hive and yes I know that there are conflicting points of view about this as well as everything else.

There are other opinions about feeding sugar syrup especially about when to feed. If you do it too early, the bees will store it where the queen should be laying eggs and the brood nest will become crowded and look out, here comes the swarm! If you feed the syrup too late in the fall the bees will not be able to convert it before it gets too cold. Sugar water is inferior to honey in many ways so I do not re-super to collect the second nectar flow if any. I prefer to leave it for the bees. They say that beekeeping is a combination of art and science. Some of this is where the art comes in.

When all is said and done, a significant percent of colony losses come from starvation. Something for us to remember.

Item 5 Insulate your hives - is it worth the effort?

Many beginning beekeepers who have lost a hive or two are quite sure that the bees did not starve to death because when they checked the dead hive in the Spring they found that the hive still had some honey in it. Yes, it had honey but the bees may not have been able to break cluster to get to it when they needed it. Bees have been known to starve in severely cold weather when just inches away from honey.

Bees try to maintain a temperature of the brood nest of from about 92 to 96 degrees. The center of the cluster has been found to be about 94 degrees. In the dead of winter and in the summer.

The bees do not try to maintain the inside of the hive at that temperature but by insulating your hives you make it is easier for the bees to survive in the coldest part of winter here in the North. Insulating my hives definitely helps them and I feel that they use less honey trying to keep the brood nest warm. With the help of the insulation the bees can break cluster and get to the honey at times when otherwise they could not.
Late November or when I get the time I do the following:
Place a 1 inch thick piece of insulating material "Blue Board" on each side of the hive and also on the back of the hive. Don't bother with the front. Half inch insulation is also very good.
Wrap the sides, front and back with roofing felt paper. AKA "tar paper" over lapping it a bit in the front. It will help keep the insulation boards in place. The felt paper is fastened to the hive in the front with staples. It will protect the hive from the punishing cold and wind driven rain and sleet. The felt paper will absorb heat from the sun and help the bees inside.
I do all of the above but if placing the insulation boards around the hive is considered over doing it, just using the felt paper will be a big help.
Be careful, the black felt building paper should not cover the hive entrance or the hole in the rim of the inner cover. Also, if you are using a moisture board, do not cover the edges with the tar paper .

If you are still reading this, congratulations. I do hope some of the above was worth your time.

Item #6 Provide some ventilation
The bees need to ventilate the hives in winter to get rid of the moisture that is formed from the metabolism of the honey they consume. As air flows upward through the hive it carries with it moisture which can condense on the bottom of a cold inner cover and drip down on the bees. The bees can use some of this water but not all of it if there is too much. To help in this matter I use a piece of porous, fiber type insulation the same size as the inner cover and place it above the inner cover. This insulating board has a one inch wide by 3/8th inch deep groove cut lengthwise through it. The groove falls over the hole in the center of the inner cove and carries the moisture out of the hive without condensation forming. I cut many of these panels from one 4'x8' sheet available from a building supply house.
My hives are up off the ground by at lease six inches which helps with ventilation.

Item #7 Provide an upper entrance
Bees can and do easily move up thru the inner cover and thru the channel cut in the insulating moisture board and can exit the hive at the top. This is especially important if the lower entrance is covered with snow. The cut-out in most inner covers also serves this purpose.

Item 8 A larger top cover

The commercially available telescoping top covers are smaller than I like so I make my own. The ones I make are a little longer, wider, and have a deeper sides than the ones we can buy. The actual inside dimensions are 21 ½" x 17 ¼" x 2 ¾" .
The only other difference is that I put a piece of 1" insulation between the aluminum top and the plywood underside. This helps on the real hot summer days and may help marginally in the winter but it's real value comes in facilitating better ventilation by allowing moisture laden air to

exit more easily thru the inner cover and the channel described above.
Also, the larger top cover extends beyond the insulation and felt building paper preventing water from running behind the tar paper and it makes it easier for the bees to use the upper entrance.

From my point of view, preventing bee loss from starvation and Colony Collapse Disorder starts in the early summer and continues thru the fall.

We need to do what it takes to maintain very strong hives and at the same time limit swarming.

We need to limit, as much as possible, all stressors on the bees since stress has been implicated in CCD. The issues mentioned above are a few of the factors that are stressful to colonies and there are many others. Pesticide exposure is a very serious stressor and there is not much we can do about it if is coming into the hives from the outside.
I change out any honey comb that is getting old and dark, This helps to get rid of pathogens that are surely residing there.

It's really not a good idea to get me talking about my honey bees because I just don't know when to stop. I'm not trying to give you the idea that I know a lot about beekeeping because I don't, but I am still learning and I am always willing to tell others what my methods are if I think it may be helpful to a fellow beekeeper.

Thanks for reading this.

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