

How to Successfully Winter Your Bees

By Kip Glass

After seeing so many people offering so many opinions about how to prepare your bees for winter, and most of those recommendations are from the 2nd and 3rd year beekeepers, I have to rebuttal some information. I think certain rumors of information keep getting recirculated in the beginner circles on Facebook and on other social networking sites.

First, I hear beekeepers think that they have to keep the inside of the hive warm. Please study bee biology and learn that bees are cold blooded insects. They form a cluster with the outer shell of bees being the insulating layer of the cluster. The bees in the interior of this cluster consume food (ripened honey or ripened sugar syrup) and these calories consumed give them energy to vibrate their wing muscles producing heat. That cluster will start to form loosely at around 60 degrees and tighten up as it gets colder.

Remember that the bees form a cluster in the summer or winter, if the colony has brood in the middle of that cluster, they must keep that brood around 90 to 94 degrees Fahrenheit on average for that brood to develop. And the stimulus for the queen to start laying eggs is day length. That means shortly after the winter solstice, (December 21st) the queen will start laying a few eggs to start the process of raising new brood.

The colony is most efficient in the winter cluster at around 40 degrees Fahrenheit. We don't have the luxury of wintering our colonies indoors to maintain that 40 degrees and regulating the CO2 and humidity, so, we do the best we can to prepare the colonies to winter outdoors.

The best we can do is to give them a sufficient windbreak to reduce or totally eliminate drafts, provide a way of venting out the moisture laden warm air that is produced by the consumption of the honey stores, and providing them with enough of those stores, located in the right location in the colony to last them the winter and into the spring buildup period.

Food

It just drives me nuts, and I don't know how this got started, but most people think you have to have a sugar cake, or dry sugar above the bees for extra feed. If your colony has plenty of ripened stored for food, and in our geographic latitude, that can be around 10 deep frames or 15 to 20 medium frames of ripened honey or ripened sugar syrup, your bees will be just fine through most of March. Notice I said "Ripened" stores. If you don't have ripened honey or sugar syrup this is not sufficient feed for your bees. Dry sugar or sugar cakes cannot be utilized effectively by the bees at all. Plan to have your bees fed and ready to go into winter by the middle of November in this latitude. I see people feeding bees after this time or during warm periods during the winter. This will be more detrimental to your bees than helping them. It will give them dysentery and add moisture into the colony that will kill them. Prepare them and forget about them during the winter and just read your bee books.

Back to the dry sugar on top. "But Kip, this helps absorb the moisture". Yes, to a point, then what do you do when it has absorbed all it can absorb? Same with wood shavings, newspaper, etc. It is better to reverse your inner cover where the single notch is facing the cluster and place a 1" foam board on top of that inner cover. (See my gallery page of pictures to see an example of this.) When that warm moist air

rises and hits that ice cold inner cover, that moist air condensates and then drips on the bees cluster before it can vent out the little hole of the inner cover. If I have the foam board on the inner cover, I can take the outer cover off on a very cold winter day and feel warmth on the top of this inner cover. This allows the moisture to vent out of the hive before condensation takes place. You will even see a little icicle outside of this hole. And the above preparation is so much easier than sugar cakes, boxes of shavings, and a lot cheaper too.

Screened Bottom Boards

Close off your screened bottom boards to eliminate drafts. Drafts and moisture hurt bees more than anything. Have a smaller lower entrance to allow the chimney effect to take place. Cool air comes in the bottom and the warm moist air rises and vents out your inner cover hole.

Do What Successful Beekeepers Do

Michael Palmer in up state Vermont does exactly what is stated above. His temps are in the below zero range for extended periods of time during his 5 months of winter. He has his whole lower entrance open with his ½" hardware cloth mouse guard in place, and his colonies fed to a set weight, and his foam board on top of his notch down inner cover, and he does wrap with tarpaper in this climate. He does have the advantage of his hives being totally covered in snow a lot of the winter, which helps with insulation and wind. You know that he does in the winter? Stays by the fire and reads his books and works in his shop preparing equipment for the next season. He knows he has done what he needs to do to have his bees successfully winter and he doesn't worry or fuss over them.

Read Older Bee Books

Again, study the honeybee. Older bee books, "The Hive and the Honey Bee", "Gleanings in Bee Culture" and many older books will give you the basics of bee biology and management that hasn't changed for centuries. For a wonderful, current explanation of bees in the winter; go to the January 2020 issue of the American Bee Journal. Meghan Milbrath has a wonderful article to help you understand how bees go through the winter.

In Closing

Prepare the colony with ripened stores of sufficient quantity, mouse guards in place, colonies in an area with a sufficient windbreak, foam board on top of the inner cover with inner cover notch towards the bees, and if you did a mite management program in August and September and monitored your mite levels to know they were below a safe level, and finally that colony raised plenty of winter bees up until October/November and you have a sufficient sized cluster going into winter; I can pretty much guarantee your bees will make it through the winter and will look fantastic in March.