

Five Essential Tests to Gauge Winter Bee Colony Health



Winter is often a worrisome time for beekeepers. Each new cold front makes us wonder if our bees have enough food, if they are warm enough, if there are enough bees in our hives, what else we can do to help them, and the list goes on. We want to share 5 simple tests, in order of importance, to see if your bees will survive and thrive this winter. We will also discuss what to do if your hive is struggling in any of these areas.

Test 1: Bee Population

Most importantly, how many bees are in your hive? We know counting isn't an option, but there are some easy ways to get an estimation. Because it is winter time, we don't want to spend too long in our hives or pull out each individual frame. Make sure the weather is above 40 degrees and ideally not too windy for a quick inspection. The best way to get a quick population estimate is to look between the two boxes. Look at the top bars of the bottom box and count how many frames of bees you see. If you look between both sides of a frame, and see nothing but bees, that's most likely a full frame of bees. Also, look at the bottom bars of the second box you have lifted up, and use the same gauge to measure the number of frames covered in bees. This time of year, you need at least 5 frames covered front to back with bees. Anything above 8 frames is considered excellent.

If you have 4 frames or less, consider combining your hive with another hive. Simply take the lid off a neighboring hive, place a sheet of newspaper over it, set the box containing the weak bees directly on top of the newspaper, and place a lid back on top. This will allow the bees to chew through the

newspaper and merge over time without fighting. If you can and the queen in the weaker hive remove her prior to combining the hives. If you cannot and the queen, go ahead and combine anyway, the stronger queen should survive. Below are some pictures to help illustrate strong vs. weak hives.



7-8 frames of
bees



3 frames of bees



2 frames on
bottom
6-7 frames on top



5 frames of bees

Test 2: Honey Stores

While a proper bee population is essential, having enough food for them to eat is equally important. As bees cluster in cold weather, they eat honey and vibrate their wing muscles to generate heat. Your hive is going to require about 30lbs of honey at this point to make it until spring. That's a deep box half full of honey or a medium box almost full. You can lift up on the hive to guess on the weight of the hive. As long as the top box feels heavy, you are in good shape. If not, then go ahead and feed. The bees will only drink the syrup on warm days above about 55 degrees. Avoid feeding sugar water this time of year unless you add some type of preservative (*Honey B Healthy* or Bountiful Bee's *Brood Booster*), as pure sugar water tends to spoil after 7-10 days, and in the cold, it will take bees longer than that to eat it.

Test 3: Mite Population

Controlling your mite population is important any time of the year. If you were unable to treat in the fall, and you are

now noticing a steady decline in population, mites are probably to blame. Treating during winter months is actually extremely effective, since there is no brood for the mites to hide in. are the treatments that we recommend.

Test 4: Properly sealed hive

One thing that many people overlook is sealing a hive properly without over sealing it. Making sure boxes are on straight and the lid is not cracked for ventilation is important. But where many beekeepers go wrong is with the ever-confusing entrance reducer and all the opening options. In Texas, we would never recommend using the smallest opening on the entrance reducer. During cold weeks when the bees aren't flying, enough bees can die and fall from the cluster to cover the small opening, which traps the rest of the bees inside. This blockage combined with a sudden warm front could cause your bees to suffocate. We always recommend using the largest opening on the entrance reducer or using no reducer at all. In our warm climate, bees need no reducer.

Test 5: Protein Availability

While not having protein available won't doom your hive, it can weaken your hive. We recommend open feeding during the winter months when there is no natural pollen available. On warm days, you will see hundreds of bees foraging on the dry pollen substitute. It should be placed at least 10-15 feet away from your hive. Bees will gather and use the dry substitute just like natural pollen. This will allow them to rear brood earlier and also supply them with much needed protein.