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ENG 409

9 December 2024

How To Prepare Beehives for Winter as a North Country Beekeeper

The frozen snow crunches under the feet of Arden Haynes, a beekeeper and co-owner of B.M. Dooney Farms, based in Pierpont New York, as he approaches a set of his hives. Today he is putting together one last hive for the season which consists of five different layers of wooden hollow wooden blocks, each containing a different crucial element for the bees. “One of the biggest things you need to do is make sure they have enough food,” he says, holding a brick of bee fondant, which he places in the layer second to the top. “It’s just sugar cake, but I mix a pollen substitute in to it. Pollen is the protein that bees use, and sugar is the carbohydrate.” In the wild, bees produce honey to eat throughout the winter in order to survive. However, when Arden harvests his honey in early August, he is essentially taking their food stores away, so he returns the favor with his homemade concoction as he buttons up the hives for winter.

For beekeepers in the north, the winter is an especially anxious time. The last time they see their beloved bees before the freeze is in early November when they winterize their hives. They come out in early March. Going into the winter the ideal population for a hive sits at around 40 to 60 thousand bees. With these numbers Arden says you can expect around 20 to 30 thousand to make it out. But what about smaller colonies? These bees have a much lower chance of survival, because bees huddle together for warmth during the winter months, essentially shivering and creating heat for themselves. The insects constantly circulate within this bundle, so all of them contribute to keeping the hive warm.

Once winter starts there is no way for a beekeeper to see how their bees are doing. The insects could all be surviving, huddled together in a tight ball, keeping warm in the hive. Or they could be spread out, having dispersed during a particularly warm day, searching the hive only to be caught alone and without the heat of the other bees by time the sun goes back down, and the temperature becomes frigid once again.

There are ways for beekeepers to maximize the likelihood that their honey producers will survive. One is the fondant which Arden makes. Each hive also receives a healthy layer of black construction wrapping as insulation. Another important factor is something called a quilt box. The quilt box sits at the top of the hive and is made from a screen with a layer of cedar shavings and a piece of newspaper on top. This quilt box acts as a moisture wick, trapping all the condensation that the bees create while they keep warm. “It’s the moisture not the cold that will kill the bees. That’s why I have to put the quilt box in there to really take away all their respiration, so they don’t turn into an icicle,” Arden explains.

Arden acquired his beekeeping experience in a colder climate, even though he hasn't exclusively kept bees in cold regions. After spending time overseas in the military, completing his wildlife biology degree, and learning beekeeping at the University of Montana, Arden and his wife Marnie Aaron moved to Texas to begin their beekeeping journey. For nine years, they maintained several hives near their home, gradually building their experience and knowledge in the craft. "I always knew I was going to be moving back to the north. That's why I wanted my beekeeping education to be appropriate for the north," Arden says. Upon moving to northern New York in 2022, Arden began capturing local swarms, primarily from people's homes, where he is often hired to remove the insects.

Here in St. Lawrence County, Arden has three different sets of hives called bee yards, which create a diverse range of honeys. One bee yard is in Pierpont at his home. In this location the bees are closer to wooded areas where they can get pollen from a range of different plants and trees. Another location is in Potsdam as well as a yard in Canton at Canton Apples.

"My house is in Pierpont, so it's practically in a forest," Arden says, "So I can only have so many bees there because there's not a whole lot of floral resources in the forest." However, in the fields of Potsdam and Canton the little flying critters are able to get their hands on a lot more pollen. This expansion will continue as Arden plans to add more hives to both his Potsdam location and his Canton one. As his bees continue to cover the local fields, they will pollinate trees, wildflowers, and other plants and make honey for the hive and for Arden's customers.

Another benefit of Arden's Canton Apples location is the proximity to apple trees which benefits both the bees and the apples. "Honeybees are specifically important to modern agriculture in the North Country when it comes to the production of apples and cranberries. Managed colonies of honeybees, like my beehives, can be taken to apple orchards when the trees are about to bloom. Apple growers want to get the King Blossom pollinated on the first day it opens. It produces the largest fruit on the tree," says North Country beekeeping expert Mark Berninghausen. Arden plans to continue expansion at the bee yard closest to the orchard.

Expansion of colonies can be a hard task and one which cannot be done without preparation. There is a likelihood every year that colonies could die off. If there are not enough bees to keep the colony warm through the winter many of them or all of them may die, leaving the bee yard with less active hives than in the summer. When this happens beekeepers sometimes give honey and bees from one hive to another, sharing the wealth to help the bees recover. The bees which have done well, kept warm and remained strong will be the honey producers for the upcoming year.

As the nights become longer, the days colder and the snow deeper, Arden's bees will be shivering away in their hives trying to keep each other warm. If they succeed the springtime will bring them flowers to pollinate and if not, they will need help to bounce back. Next year, Arden will harvest honey from the colonies that thrive as producers at the beginning of August. This

honey will be available at B.M. Dooney Farms and at the Canton Apples farm stand which sits twenty yards from a set of Arden's hives.



Photo 1: A brick of bee fondant on top of a half-built hive.



Photo 2: Arden Haynes sets up one of his hives.



Photo 3: A fully set up beehive.