

“One of life’s most painful moments comes when we must admit that we didn’t do our homework, that we are not prepared.”

– Merlin Olsen

Last month we reviewed the pros and cons of various types of syrup feeders for supplemental feeding (see [“What makes a syrup feeder a good one?”](#)). In Piedmont NC, we often must provide supplemental carbohydrates in early spring to prevent starvation while we are waiting for the spring nectar flow to begin in earnest (see [“Beware the Ides of March”](#)). We also must feed when our fickle fall nectar flow fails us, leaving our colonies unprepared for winter. In those situations, syrup feeding while temperatures are warm enough to allow the free movement of our bees is ideal, and the only question is what delivery device suits our needs best.

Emergency feeding is different. Syrup feeders aren’t usually best for true emergency feeding for several reasons, the most important of which is that when the ambient temperature is quite cold, bees will be in winter cluster and will not leave that cluster to access food, even if that food is inches away. It is analogous to when us humans are “snowed in” following winter storms: Food Lion may have lots of beanie weenies on the shelves but we cannot get to them.

Fortunately, our winters are typically mild and cold spells are followed by periods of nicer weather. In those warmer days, syrup feeding can allow the bees to backfill gaps in their storage space, rebuilding the large swath of contiguous food that is mandatory for survival of the cluster. But even then, it won’t be quickly cured like it is supposed to be, and cold nights will interrupt the task of moving and storing it. The important take-away lesson is that fall, not winter, is the time to build up winter stores. But things happen, and if left short of carbohydrate stores, the choice is between emergency winter feeding and starvation.



This photo shows a common and classic case of winter starvation. Note how the dead bees in the brood nest are an inch or two away from a patch of honey.

Photo: Lloyd Frick

Is feeding needed?

I’m a firm believer in not messing around with my bees in winter unless absolutely necessary. I don’t conduct full-out, pulling-brood-frame inspections between November 1st and March 1st. See [“Winter Inspections”](#) for more on this topic. But that doesn’t mean that I don’t assess the conditions of my colonies in winter – I just do it without adding unnecessary stress to their already-stressed winter lives.

There are two easy ways to determine if our colonies need emergency feeding. The first is the Lift Test. Simply grab the middle of the bottom board from behind and lift the hive an inch or so. I strongly recommend practicing this technique during the warm months. Do the Lift Test, then open up the hive and pull frames to discover how much honey caused it to feel as heavy as it did. Then come winter, we can get a reasonable estimate of how much honey remains just by lifting. If we have to struggle to lift the weight, that suggests the colony is in good shape. If lifting is easy peasy, immediate feeding is needed.

Another clue as to the state of a colony’s honey stores is to take a peek under the cover into the topmost box. Don’t agonize over the possibility of chilling the bees. Adult bees can handle a blast of cold air just fine, and we aren’t going to have the cover off for more than a few moments anyway. (Contrary to adult bees, brood cannot withstand being chilled, which is

why we shouldn't pull out brood frames in cool weather.)

With the cover removed, where are the bees? Remember from Bee Biology 101 that well-behaved honey bees store their honey above the brood nest and the nest moves up into it over time. If the bees are all massed at the top, right under the cover, that implies that they have eaten their way through all of their food stores. Alarm bells should go off.

Keep in mind that unless we are completely incompetent as beekeepers or have the world's worst luck, our bees are not likely going to starve at the beginning of winter. They'll starve in late winter after they've consumed their resources, often after they have already begun resuming brood rearing in anticipation of spring. We must maintain our stores-assessment vigilance until the main nectar flow begins, which isn't until April in my area of the north-central Piedmont.

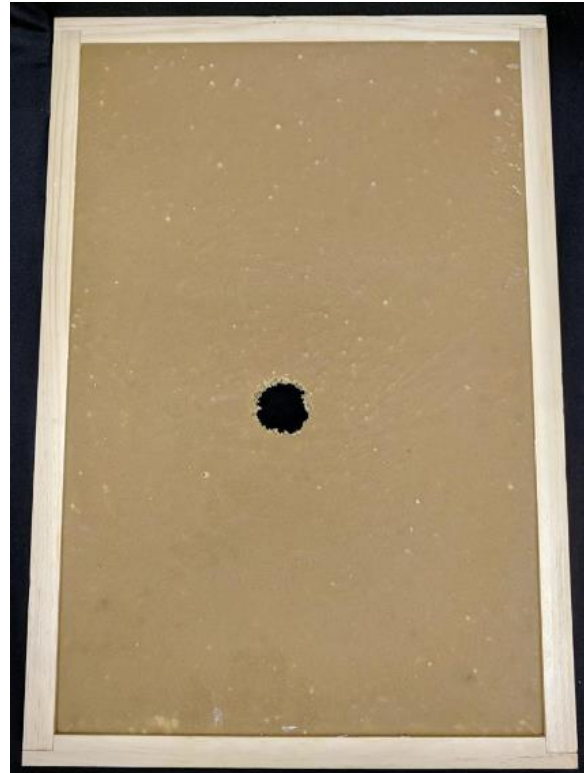
Emergency feeding essentials

A critical factor in emergency feeding is that the cluster must be in contact with the food. Reemphasizing what was said earlier: bees in cold-weather cluster cannot and will not travel across empty comb to get to food, even if it is just inches away. So ironically, bees that have eaten their way all the way up to the hive cover are in a great position to be fed. The best methods put sugar directly on the top bars so the cluster, surrounding the nest, is in unencumbered contact with it.

Fondant

Fondant is a fancy word for bakery icing. It can be bought in bulk and fed directly to our bees. A quick internet search shows that we can buy fifty pounds of commercial bakery fondant for around \$1.50 per pound. Smaller quantities can be purchased at craft stores for significantly more per pound.

Fondant has the consistency of soft cheese. It can be sliced into sheets or strips and laid directly across the top bars. Use a shim or empty honey super to provide space for several nice, thick slices. An inner cover isn't needed



We'll pay a premium for a commercially-prepared candy board over a DIY version, but the convenience may be well worth the extra cost.

Photo: Bailey Bee Supply

(and isn't needed for any of the top-feeding methods mentioned here), but if you do feel the need to use one, make sure that the notch which provides an upper entrance is closed off. Otherwise you may end up feeding all of the bees in the neighborhood. (See "[All Hail the Inner Cover!](#)" for information on the real purpose of inner covers and how they should be used.)

It may be helpful to staple a layer of ½-inch hardware cloth (wire mesh) to the bottom of the feeding shim. Place the fondant on the mesh and then everything goes directly on the top bars. The advantage of the mesh is that it should allow the fondant to be easily removed, without a lot of mess, if we need access to the frames below.

Mountain camp method

Probably the most basic and cheapest emergency feeding approach is commonly called the Mountain Camp Method. Place a

sheet of newspaper directly over the top bars, then surround it with a shim or empty honey super. Lightly spray the newspaper with water, enough to make it damp but not so much that it dissolves. Pour granulated sugar directly on top of the newspaper, alternating sugar and water spray. The water spray helps hold everything together.

This is quick and easy, but honey bees may not recognize granulated sugar as food. Acceptance by the bees is hit-or-miss at my place. Sometimes the bees love it and sometimes they just throw it out as trash.

Candy boards and bricks

A candy board is essentially just what it sounds like: a large slab of solid sugar encased in a shim. These can be purchased commercially or homemade. Smaller versions of the same thing are called candy bricks. Either version goes directly on the top bars, not on the inner cover, allowing the cluster to come in direct contact with the sugar.

There are numerous candy board recipes on the internet. (Hint: all we actually need is granulated sugar and water!) Cooking is not necessary as long as the sugar is completely mixed with just enough water so that it forms a true sugar block (think of a peppermint candy). A lot less water is needed than one may think, but do ensure that all of the sugar is dissolved into the block. As mentioned, loose sugar granules may be regarded as trash by bees and discarded, but that cannot happen with a sugar block. Pour the sugar slurry into pans an inch or two thick, allow to dry and save for when needed.

Some beekeepers put a candy board on their hives in winter even though the hive is well provisioned with food. This is a form of insurance just in case things go sideways and that fact eludes the watchful eye of the beekeeper. There is no disadvantage to this practice with respect to the health of the honey bees – it is similar to simply having an extra, full honey super on the hive. It does make inspections more cumbersome but I avoid deep-dive inspections in winter anyway. If the

candy board is untouched or lightly touched by the bees, it can be put in storage and used again next year.

Caveats and bonuses

1. When the bees have eaten away the sugar within the feeding shim, in late winter/early spring the empty space will likely be filled with burr comb and brood. This must be cut out to allow access to the frames below.
2. The bees won't replenish their carbohydrate stores in the comb with fondant, candy or loose sugar. They'll simply feed off of it where it is. Don't remove emergency feed until syrup feeding or the natural nectar flow has resumed and the bees have carbohydrate stores in the proper places.
3. A side benefit of mountain camp and candy board/brick feeding is that the sugar will absorb moisture from the hive. This makes the sugar more accessible to the bees as well as reducing problematic moisture, if that happens to be a winter issue at your bee yard.

The best method

Which method is best? That's an easy question! The best method is the one that works best for you to keep your bees from starving to death if they run out of carbohydrates during winter and early spring. Keep good notes, share advice with beekeepers who have a long-time history of success and experiment. And if your bees exhaust their food supply, feed somehow; the result, not the method, is what is important.

Randall Austin is a NC Master Beekeeper who keeps a few honey bee hives in northern Orange County, NC. He can be reached at s.randall.austin@gmail.com.

Note: All previous articles are archived at https://baileybeesupply.com/educational_resources/ Copyright 2024, no reproduction in whole or in part without permission of the author, except for noncommercial, educational purposes.