

POLLEN BOX OVERWINTERING

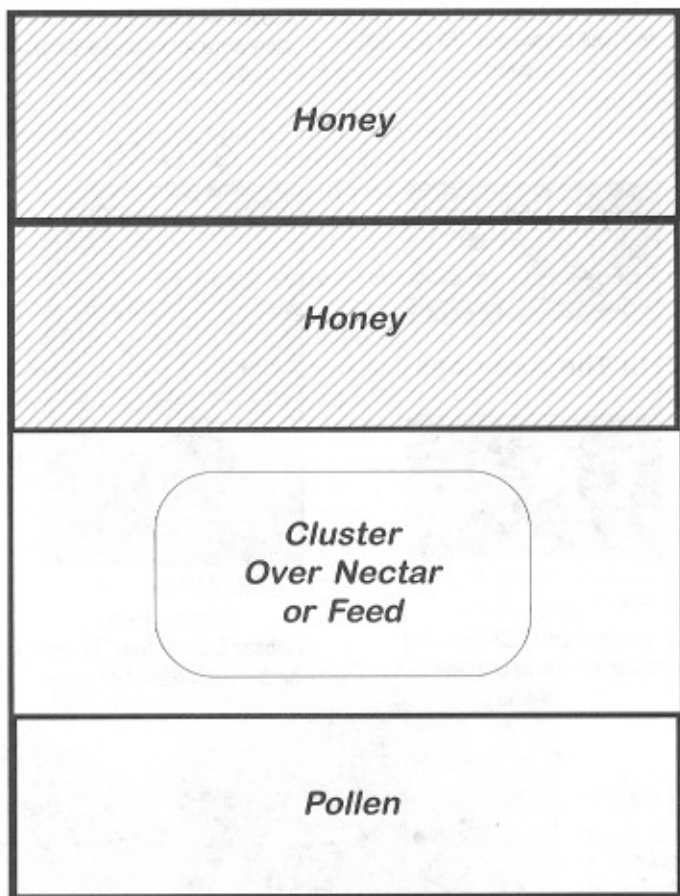
Walt Wright

The literature is big on providing sufficient honey stores for Wintering in your area. The results of failing to do so are stark. The sight of a starved colony is at once a pitiful thing, and the beekeeper responsible feels not only remorse, but also has twangs of guilt. These emotions tend to push adequate honey stores into a priority position.

The effects of a shortage of Wintering pollen are not nearly so dramatic, but are *very* significant in colony development for the following season. The colony must have pollen stores within the warmed cluster volume to rear mid-winter brood. Midwinter brood rearing offsets the cluster decline in volume due to loss of Fall bees. If deprived of pollen in midwinter, the cluster volume continues to decline into the late Winter/early Spring period of the build up. Spring dwindling sets in before field pollen is available. The effects of this condition are not as stark as starvation because the cluster, although alive, just continues to shrink. Winter losses are important when factored into your bottom line, whatever the cause. And weak colonies in the Spring are not honey producers without substantial effort.

Shown here is my recommended

Wintering configuration, replacing the double deep. If you have recovered your composure from your initial reaction to this bizarre stack, perhaps you will be interested in *why* it is better, in my opinion. Of



course, if you are addicted to the double deep, it is your prerogative to continue to abuse your bees. As owner, you pay the bills and suffer the consequences.

The data I've collected points out that some colonies will "fill" the lower deep on the white wax flow with pollen, and led to the following investigation. I concluded that brood nest reduction included raising

the bottom with Wintering pollen in the natural environment of a hollow tree. If so, that meant that our hive design was somehow interfering with the colony's normal processes, so I tried to alleviate the hive design problem. Initially a box of foundation or drawn comb *below* the double deep during the build up. The results were iffy. Some colonies used the added box for pollen storage and some didn't. The results were not as positive as I had hoped. But when a box of brood was moved to the bottom board, the results were more uniform. All colonies had pollen in that box by harvest time. This confirmed my suspicion that our hive design was indeed interfering in their normal storing processes.

When I was Wintering in double deeps, about 25% were feeble in the early season. At one

stage on my learning curve, I used to make post-harvest divides out of 25% or so of my colonies. These divides were a source of expendable bees in the Spring to maintain a

constant hive count. But, since I started adding the pollen box below the basic brood nest, I've quit making those post-harvest divides. Colony Wintering is much more consistent when pollen management is deliberate.

Now, I haven't lost a colony over the Winter in years. My mite management is effective, and most of my Winter losses of yesteryear were the result of queen loss.

The tidbit on Winter queen loss is included here to make the point that Winter dead-outs are not inevitable. Cold itself does not kill bees. Their little trick of generating enough heat in the center of the Winter cluster to warm the bees of the insulating shell is unique in the insect world. If you take care to provide colony Wintering requirements, you'll have less Winter loss. In this article, we are discussing pollen for midwinter brood rearing.

It is true that my local milder, and shorter Winters improve survival rates – even with poor preparation by the colony. But poor preparation takes a greater toll as we move northward. The principles advanced here become more significant at more northerly latitudes. Strangely enough, if you look at what happens in very cold climates, the bees are more likely to get it right. A colony Wintered in a triple deep will typically Winter in the second, or middle deep box. The lower deep is used for pollen and the top deep is filled with honey. For lack of a better description, I call this the "sandwich concept." The Winter brood nest is sandwiched between the stores required for Winter brood rearing. In the triple deep, the colony contempts for the break in functional comb between deeps actually assists them in getting stores properly placed.

The recommended configuration applies the sandwich concept for colonies located where less stores are needed for Wintering. Here in Tennessee, a single shallow of honey would be ample if the brood nest is filled with nectar in the Fall. The second shallow of honey is shown for colonies maintained at intermediate latitudes such as Ohio. In either case, the colony preference for rearing brood on deep frames will cause them to gravitate to the deep chamber for a Winter

brood nest. Additionally, the use of shallows for Spring brood nest expansion does not seem to slow them down much. The urge to reproduce (swarm) is a strong motivator. An intermediate Winter cluster can add three shallows of brood to the basic deep in our short build up season, if forage is supporting.

This arrangement offers two main advantages to the colony for Wintering. In addition to pollen for Winter brood rearing, a second advantage is rather subjective. Brood nest expansion in the Fall is not competing with Winter stores for space. With honey above and pollen below, the colony is comfortable with use of the deep just for brood. This permits them to rear *more* young bees for Wintering. However, you're not relieved of the obligation to confirm that the brood nest is filled with liquid feed after brood rearing terminates. If the colony relocates upward on solid capped honey, abandoning the empty brood nest, the pollen box will be out of reach. The recommendation from here is to check the status of the brood nest at about the first killing freeze. If the brood nest has empty cells or capped brood, feed, feed, feed. Field nectar may terminate with the freeze, but periodic mild days between cold spells will permit the colony to move feed to the brood nest. The "heft" test, reflecting colony honey weight, does not tell you that the brood nest is properly prepared for Winter. *Eyeball it*, feed if necessary, and watch your bees come through Winter in better condition.

Although the configuration shown is oriented toward improved Wintering of the colony, there are some fringe benefits for the beekeeper. Never having to lift a deep of honey is significant. A deep of brood weighs less and would seldom require lifting off to go below. In that same vein, you know where the brood will be when medicating for pests. You can rest assured that the colony preference for rearing brood in the deep will prevail, and Fall brood rearing will be centered there. In the Spring, the colony that had the brood nest properly prepared in early Winter, and starts brood rearing there, will still be using the deep brood chamber *for its intended purpose*.

But after initially getting the colony into the recommended configuration, you're still not home free. Some additional effort may be required in subsequent seasons. All colonies do not react to configuration differences in the same way. Some will maintain pollen in the pollen box throughout the active season. The only extra work there is to check that pollen has been maintained through the early build up. Some colonies will have both brood and pollen in the pollen box – they are O.K. also. Now there's a controversial concept. The indications are that in the wild brood nest, the colony expands the brood nest in both directions: up into honey and down into pollen. (Everybody "knows" that the colony never expands downward.)

The colony that lets the pollen box empty out in the early build up is the one that needs some help in getting it right. If their sensitivity to the break in functional comb is severe enough to let the pollen box go empty during the build up, they are not likely to use it for pollen for the rest of the season.

About mid-build up, and before the stack gets high enough to be extra work, check the pollen box on the bottom board. If the center frames are basically filled with pollen or brood, you can forget them for the season. But if the box is basically empty, reverse it with the first shallow of brood from above. They will get it right for the remainder of that season.

Although it would do no harm to leave the shallow empty at the bottom for the whole season (adding six inches to the stack), the objective is to provide pollen at the lower edge of the Winter brood nest. Another advantage to the colony, not mentioned above, is physical separation of the brood nest from the cold and drafts of the bottom board. There would be more room for the insulating shell at the bottom whether filled with pollen or even if it was empty.

The extra inspection and/or manipulation is well worth the time required. Although accomplished in the early season, it is an investment in reliable Wintering. **BC**

Walt Wright is a life long student of the honey bee.