

100% Overwintering Success in Ohio

by TOM and FRAN DAVIDSON

For the past three winters three Southwest Ohio beekeepers achieved 91% colony survival with 157 hives. All three achieved **100% survival** for the winter of 2015-2016 with 62 colonies surviving at three separate bee yards. The three beekeepers use different equipment and various products, but agree 5 important common practices contribute to success.

Phil Young Overwintering

94% success (17 of 18 Colonies) 2013-2014
87% success (20 of 23 Colonies) 2014-2015
100% success (28 of 28 Colonies) 2015-2016

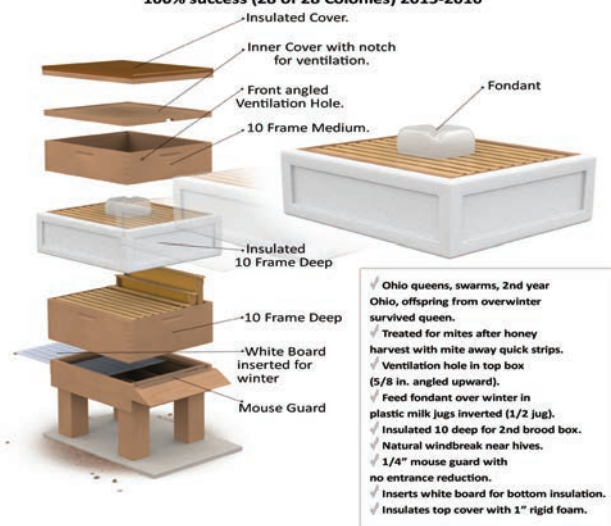


Figure 1. Illustration by ryan@artistrendering.com.

Phil Young of Northeast Clark County, Ohio uses two 10-deep Langstroth boxes for brood (Figure 1). Last winter he began using an insulated 10-frame deep for the brood chamber on top of a traditional 10-frame wooden box. A simple and effective winter feeding technique uses an inverted gallon milk jug (cut off bottom half) filled with fondant and a small protein patty placed directly on top of the highest brood frames. An empty medium super protects the fondant and provides a dead air space below the inner cover. Use of the empty super simplifies inspection by merely lifting the inner and telescoping covers. Minimum hive disruption or heat loss occurs. The underneath of the telescoping cover is insulated with one inch rigided foam board. Phil is contemplating leaving the insula-

tion under the lid year around for protection from excessive heat as well. With his winter configuration, Phil has left his hives unattended for several months each year while still celebrating excellent winter survival.

Dave Foubert Overwintering

82% success (9 of 11 Colonies) 2013-2014
75% success (9 of 12 Colonies) 2014-2015
100% success (12 of 12 Colonies) 2015-2016

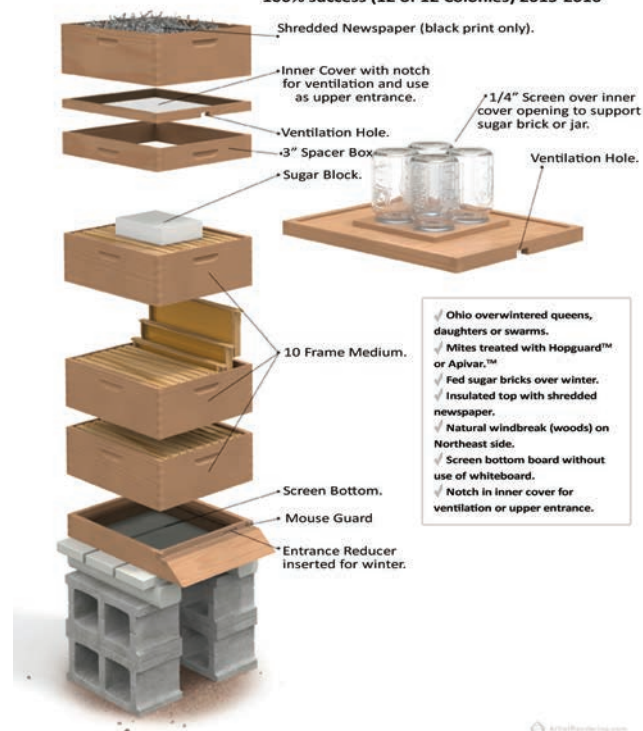


Figure 2. Illustration by ryan@artistrendering.com.

David Foubert of Greene County, Ohio stacks 10-frame medium boxes three high to overwinter brood (figure 2). He has modified the Langstroth hive to include a 3" spacer to accommodate a commercial sugar brick on top of the highest brood box. David mounts his inner cover on the spacer with a screen over the ventilation hole. He fills an empty medium super on top of the inner cover with shredded newspaper before closing with an insulated telescoping lid.

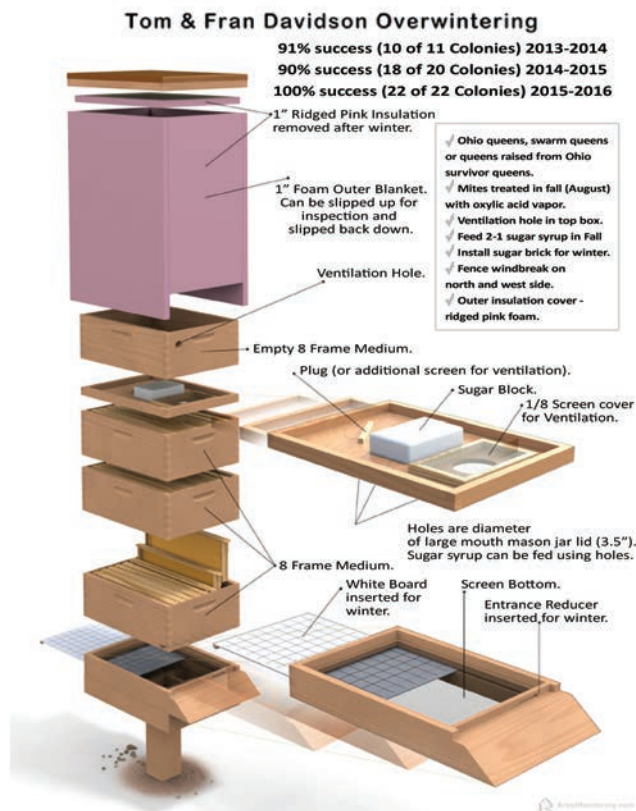


Figure 3. Illustration by ryan@artistrendering.com.

Tom and Fran Davidson in Western Clark County, Ohio use 3 or 4 eight frame medium supers for overwintering (Figure 3). They have fabricated their own inner covers with 3.5 "diameter wooden plugs. This allows placement of homemade sugar bricks over the holes for winter feeding. The bricks are inverted in a translucent container so that they can easily show how much has been eaten. The holes in the inner cover allow them to insert wide mouth mason jars with sugar water as needed in spring or fall. An outer blanket of 1" rigid foam is slipped over hives for winter protection against subzero winds.



Fran Davidson's homemade sugar brick on custom inner cover. Photo by Fran Davidson

After achieving 91% overall survival for 3 years including two severe winters; the three Ohio beekeepers analyzed what common practices were used to achieve success. The following conclusions are offered in hopes of helping readers significantly reduce winter losses.

Provide adequate ventilation: All three beekeepers use an empty super on top of their hives with insulation under the telescoping lids. The empty super needs an exit for warm moisture and carbon dioxide to escape from the hive. Either a hole drilled into the side of the empty super or a ventilation notch on the bottom side of the inner cover is used. Not all commercial inner covers come with a notch so one is added.



Fresh cut notch in commercial inner cover. Photo by Tom Davidson

Insulate against severe weather: Phil Young uses foam insulated deep brood boxes to protect against extreme cold. David Foubert places his hives against a natural wooded wind break to protect against frigid winds from the north and west. Tom and Fran Davidson wrap each hive with at least 1" rigid foam. All three beekeepers close their screened bottom boards with white boards or trays to block cold subzero winds from robbing precious heat from hives.



David's hives protected by woods in background. David Foubert (left) Tom Davidson (right). Photo by Fran Davidson

Feed the Bees: The three beekeepers agree that adequate honey stores lasting all winter is the optimum feeding choice. However, each beekeeper provides supplemental feed in the form of sugar bricks or fondant as insurance against winter starvation. Small amounts of protein patties are provided going into winter but when bees stop eating; the protein is removed.

Treat for mites: All three beekeepers treated their hives in spring and fall for mites after honey for human consumption was removed. Phil Young uses Mite Away Quick Strips and oxalic acid vapor as a follow-up treatment if needed. David Foubert alternates the use of HopGuard II and Amatrax in spring and fall. Tom and Fran Davidson use oxalic acid vapor in spring and about mid August. An initial vapor treatment is administered to each hive to determine severity of infestation followed by additional treatments at 5-7 day intervals if deemed necessary.



Phil Young holding bottom ½ milk jug used as a fondant feeder. Photo by Tom Davidson

Use local queens: It was a strong consensus that the most important factor in winter survival was the use of local Ohio queens or their offspring in hives. These are raised by splitting overwintered colonies, catching swarms, grafting or purchasing from queen producers that raise queens from nearby regions. Once the three beekeepers were able to stop using package bee's from distant regions their overwinter success greatly improved.



Grafting Local Ohio queens. Photo by Tom Davidson

The good news is that backyard and sideline beekeepers can achieve low winter hive losses by adopting a few key practices even when a variety of individual methods and equipment are used.

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