

NOW WHAT?



Winter is just two weeks away. Things are brown, cold and breezy. Aren't you glad you are not a bee! I wonder how they feel flying out and not seeing any flowers left.

Well, this is the time they have been preparing for, and why you have been helping them with all that sugar water you gave them! If you are not sure now what to do over the next four cold months perhaps a few pointers will help. Permit me to share some of my thoughts about:

1. Moisture and ventilation.
2. Winter/cool weather inspections
3. Feeding during winter
4. Spring preparation during winter
5. misc

1. Moisture and Ventilation

Inadequate ventilation can cause moisture to condense and freeze on the inner cover and drip down when it thaws. This water can be near 32 degrees and can chill and kill bees if it drips on them. The bees cannot move out of the way if they are stuck in their cluster. This moisture is partly the product of the bees' bodily activity just as you breathe out frost in cold air.

The easiest way to tell if ventilation is adequate is to look at the underside of the top cover. dry wood = probably ok/might be too much; damp wood = may need more ventilation; water condensation on wood = probably inadequate.

I generally keep my screened bottom boards open all year round and adjust a couple things as I see the moisture on the lid:

*Inner cover holes (yes plural . . . I have two extra 2" diameter holes near rear corners) can be covered in part or whole with thin wood pieces.

(side note: inner cover holes should have 1/8" hardware screen stapled over them.)

*top cover can be propped higher or lower, say in 1/8" or 1/4" increments.

So simply put-if you see water or dampness/mildew on lid-open things up a bit. If it is dry, close things up a tad, then check again later and adjust as needed.

Ventilation's flip side is if winter winds blow into the hive it can cause *too much* airflow.

If your bottom board has a rear slot for a mite board you **must close it** off.

Your entrance should have been reduced when you put on the mouse guards. I usually cut them down to about 2 to 2 1/2" wide.

Regarding hive stands any place where N, NW, or W breeze might blow in under a stand I block off with either fitted planks of wood or surplus pieces of hammer-in garden border etc. The only place air can come

in is either through the entrance, under a small area in the *front* side of the stand, or vent openings I have on some of my newer stands. Stuffing hay or grass can work too just make sure it is packed tight and stays there. Point is air should not be able to blow in from the N, NW, or W breeze.

If your hive is up on cinderblocks or some arrangement where your hives are 'hanging in space' you will need to work out how to close off the gaps that might allow wind to blow into the hive. If your screened bottom board is wide open to the wind and you have no way to close the stand it is better to put the mite board in and seal the back where it is inserted. (I used to do this sometimes at home yard when really cold weather came but when I saw no difference in survival with the outyard hives that did not have boards installed I saw it was generally unnecessary so long as stand can be closed up.)

Don't worry too much about snow. If you picked up a big handful you could breathe through it (I had to try this before I stopped worrying). That said it is easy enough to clear off snow when you have hives at home if it is not unsafe to walk to them. Outyards are usually unsafe to get to in such conditions so it is best to just not worry about for normal snowfalls. Heavy ice might need to be removed if it were to seal the entrance-just depends. Don't go out and take a fall and injure yourself for this. So basically-safety first on snow and ice-besides, the gap in the top cover allows air to get inside through the inner cover hole.

2. Winter/cool weather inspections.

You can inspect a hive in winter if you do it under the right conditions and for the right reasons. In fact you need to inspect your hives. I am not talking about pulling everything apart. I am not talking about thinking you have to go in there every week.

Be sure to be *very very gentle* and do not slam the lids or pop off the inner cover with a fast motion. This would upset the bees and they might be inclined to investigate, and if it is cold they are mostly idle and should stay so. I almost *never* remove boxes even when weather is warm as the propolis seal is broken and drafty air could then come in. I also normally don't pull frames.

Do NOT spend much time with hive open-one or two minutes is plenty to see what you need to see unless you are doing a post mortem.

You will want to take opportunity *when it is presented* to check for several things over the winter:

- are they alive?
- where is and how big is the cluster
- do they need food?
- are they dwindling?
- You are NOT normally looking for the queen or brood in winter.

Your opportunity is based on the weather. There are always some days in the mid 60s to mid 70s even in Jan/Feb so keep an eye on the weather forecast. If you want to check if your bees are alive don't just look at the colony from the outside and see the bees flying, you have to look inside. IF your colony was dead you might be seeing robbers on a Black Friday shopping trip.

You have a choice--
A. Inspect on a day when bees are flying
B. Inspect on a day when bees are not flying.

A. So a warm day when the bees are flying, say 60 degrees or higher, is a good time to remove the top and inner covers and look into the colony to see where the bees are clustered. If you cannot see the bees it is possible they are still low in the hive, especially an early winter inspection but this is not reason to tear apart the hive. Take a good flashlight and shine it down between frames you can see where the bees are. With experience you will know when it is OK to pull a frame or two to view down to the next box-so don't pull frames unless you know what you are doing.

The object is to figure out where the cluster is and if they have enough food left. That means they have enough honey OVER the cluster. Also note how big is the cluster--if they are only covering 2-3 frames in Jan/Feb they may not make it. However I have seen colonies with a grapefruit size cluster in March make it.

If you find the cluster right up at the top-i.e. the bees are right under the inner cover-that would be an **emergency** and you would be making fondant that day! (see 'Feeding during winter'). Remember though if it is a warmer day many bees would be up there retrieving food and fussing around so you might not be seeing the cluster up there.

If bees are up top and you have frames of honey you could put them in *adjacent* to the cluster to replace empty frames there but **DO NOT EVER BREAK UP THE CLUSTER**--i.e. do not insert frames in the middle of the bees, do not shuffle the cluster frames around whatsoever.

Do not assume a colony is OK because you see bees flying in and out-it may be robbers if it is a warm day. Robbers can be in there even if the colony is still alive-though it would have dwindled to the point they cannot defend the entrance. If you open such a colony when robbers are there the robbers will race out the top. Ragged, broken open cells of honey are a sign of robbing.

B. When it is 40-50 degrees with no wind it is ok to remove the top and inner covers but **do not** take off boxes or pull frames. Again, the time hive is open is maybe 1 or 2 minutes max. When it is below 50 (normally) most of the bees inside will be together in the cluster. The bees probably wouldn't be flying, and you can usually tell if the cluster has moved up into the food super or not (by food super I mean the top box). As temperature goes above 50-55 the cluster will be less coherent-bees will be moving around retrieving honey and flying so the cluster will not be as distinct.

Again, you don't want to remove boxes or frames. The bees would get **quite upset**. They have propolized everything in place and sealed up cracks to stop drafts. You can usually see the capped honey by looking between the frames without removing them. Use your flashlight.

Without opening the hive I often put my ear to the back and sides of the hive on a cold day when the bees would not be flying (eliminating possible robbers confusing things) -you can usually hear a soft hum. If you rap on the side once or twice and you should hear a buzz rise then immediately fall off like zzzzzzzz. If you don't hear anything the colony may be dead (or you may need hearing aids :).

How do you know they are dead without tearing the hive apart? Well, you'll know I think.

Listen, Look, Think. If you try to check the colony every 4-5 weeks on warm days, you will know where the cluster was and how many bees were there at the last inspection etc. As winter progresses the cluster moves up and eventually settles in one spot once brood rearing starts up late Jan-early Feb. If you LISTEN to the hive on a cold day (calm 40-45 degrees-no breeze) and don't hear anything and then open the hive (i.e. on this cool no robbers are out to confuse the inspection) and LOOK and do not see any live bees where they were or where you THINK they should be they may be dead.

If the colony dies or dwindles, you may not see piles of dead bees in there. This does not mean you have CCD. The bees take out the bodies whenever it is warm enough. Once they dwindle too much then they can't maintain needed heat and the rest eventually die in place on a cold night.

If you are pretty sure you have no live bees then you can pull frames and diagnose what happened. You may see nosema / **diarrhea** stains inside. Often this is why they have died-and usually you see dead bees in place in a small group somewhere in the combs-with stains about if they had dysentery.



You may find no honey at all which means they starved. They may have had too heavy a mite load in Fall and as the lifespan shortened bees died week by week they gave out.

If your colony dies you must protect the combs from robbers and moths. Seal the entrance until you have time to clean up things for the new inhabitants you are likely to have now ordered. You will want to clean out the dead bees, clean off nosema stains with vinegar (or use new frames), repair and repaint any needed items. Be sure you do not leave combs exposed in warm conditions as wax moths will ruin them. I normally clean up things, reload the combs in the box, seal in a tall kitchen bag and put in the deep freeze 4-5 days which will kill all wax moth stages. If you don't have a freezer-if there has been freezing weather you can still bag them and likelihood of moths is reduced. but getting them to zero is better.

3. Feeding during winter.

Your feeders should be off now. In other words all you have up top there is the inner cover and top (telescoping) cover, and bricks/weights enough to hold it all down in winter storms. Do not underestimate the strength of winds in winter-I have had wind over 70mph at my house and numerous instances of wind in the 60s. So what if you have three bricks on (or a half cinderblocks like me) if you aren't in the hive every week (see #3 inspections below)? It is better than the top blowing off and the bees getting colder or dead.

If you do have to feed at some point in the winter (determined by winter inspections-see that section) you must **not** use bucket or jar feeders now that there are cold nights. Those feeders can draw air in when it gets cold then pump deadly cold syrup onto the bees when air in them expands. Bees cannot survive if their body temperature gets below about 46 deg F.

How much food do the bees need for the winter? In Virginia it is generally estimated a colony needs about 60lbs for the winter. Now about half of this is often used in the last third of the winter prior to the first spring nectar as the bees begin building up brood nest as early as end of Jan beginning of Feb. By March they may have a lot of brood to feed and warm. A medium box holds approx. 30-36lbs of honey so if your top box is a medium of honey they can run through this between 1FEB-31MAR depending on conditions. Once brood rearing starts up again they must raise the temperature of the brood to 93 degrees which takes a lot of energy. With no brood they only have to keep the cluster above about 46-50 degrees. So you can see honey consumption is greatly increased not just for heat but for brood food. Late winter is also tricky since the bees will not move from the brood when it is cold so the cluster cannot simply move up and reposition-they have to go get the food and bring it to where they are.

So if you do need to feed you should either:

Make fondant - a cake of fondant candy is placed on the top bars (of top box) with a shim as cake may be 1-2" thick or so. Since the bees are probably near the top they can get to this readily even if somewhat cool as their heat rises up to the candy.

Give frames of honey-see 'Winter inspections..A'

Use a Thorne Rapid feeder - you would not necessarily want to have this on if you only have one ventilation hole on your inner cover. Note the bees cannot get to the syrup if it is much below 55. Advantage is you can fill without exposing the bees but it only holds ½ gal.

Use hive top (“Miller”) type feeder-Again-this can obstruct ventilation and the bees will only be able to get to the syrup in warmer temperatures but if it is all you have you can use it.
Do not use a division board feeder as it requires opening the hive to fill.

Fondant recipe can be found on the club website http://www.loudounbee.org/class_handouts.htm click on ‘bee brew and such’.

Rapid feeder can be seen at

http://www.beeworks.com/catalog/index.php?main_page=product_info&cPath=1&products_id=14

4. Spring preparation during winter

If this is your first season hopefully the bees have their hive fully built out and are chock full of honey. Assuming they survive, in spring you will see a whole different story. Your bees will expand quickly and will be busting the box by mid April when you need to add supers. If they don’t swarm and grow very strong, and honey flow is good you can have 3-5 supers on a hive before they even get around to capping any of the honey! If you don’t have supers ready then you best make ready to catch swarms☺. Plan to add supers 15APR. If you have comb I would give them two supers then, if you only have new boxes with foundation give them one.

As many of you found when ordering for your first colonies, spring can be a time when orders can be delayed or backordered. If you are planning to expand your colonies or increase your inventory of supers to put on next honey flow you might want to order your frames and boxes now and get that all built.

To order foundation you will need to plan a bit as supply houses do not like to ship foundation once weather gets too cool/cold (like 40 or below)as it will be damaged in transit being brittle when cold. Some may already be under ‘ship at your own risk’ policy for the winter or may not ship at all. Of course if you use plastic foundation this is not an issue (I prefer wax myself).

Walter T Kelley (my own preferred supplier) states: “We hold all foundation orders till above Freezing unless customers request that it be shipped at "Customer Risk". What this means is if I have to get it I watch the weather forecasts (<http://forecast.weather.gov>) for Clarkson, Kentucky and our area to know when a warmer period is due and then order.

Even if you don’t/cannot get wax until spring you can get your frames/boxes/stands etc. ready. Then get wax in when you can. It doesn’t take long to put in your foundation.

A general target of three honey supers per colony is not too ambitious.

Also, if your hives are 4 years or older you should try to start rotating out two frames per hive box and give them new foundation. (More on that in February or so).

If you are setting up new colonies then winter is a good time to get the site ready. You will want to have the spot picked out, clear out any stuff in the way, and then setup your hive stand at least a week before your package/nuc is ready. I often will weigh down a new stand with bricks to help it settle then I can relevel it before setting hives.

5. Misc.

Your stands/hives should be level if on screened bottom boards. If you have solid bottom boards the hive should be tilted forward a bit enough for condensed water if any can run out.

It is good time to rake up a supply of pine needles (be sure they are dry) for your smoker for next season.

Don’t spend time invent heating devices for your hives. Bees have been known to live through temperatures of 40 below zero (Fahrenheit or Celsius - it is the same at -40)

Finish reading your bee textbook if you haven’t already, and then buy another to start on like ABC&XYZ of Bee Culture or The Hive and the Honeybee. (I just ordered three more old bee books!)

If you haven't already, order Bee Culture, or American Bee Journal subscription (or both)
see: http://www.loudounbee.org/membership_form.htm discounted rates for members who are current.

Hoping you and your families have a wonderful Christmas and New Year - Jeff Pfoutz