

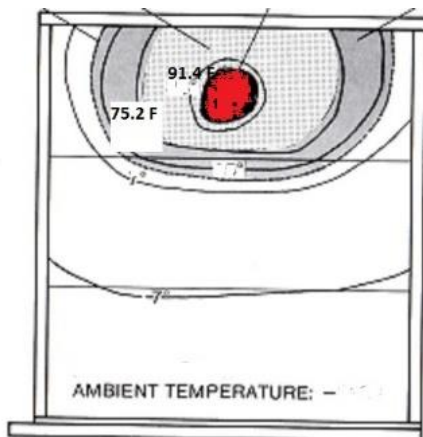
Stahlman Beekeeping Notes for 2022

The beginning of the winter
season



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Cold nights have finally arrived and a new time line is beginning on how I manage my hives. For the last several days I have seen not a single bee taking flight from any hive. Our temperatures here in Raleigh are more like January than November and it looks like this weather will last for the next week. Weather has a strong impact on a hive of bees. Unlike Ohio and northern states, our bees in North Carolina usually have no long dormant period. I often look forward to seeing bees flying on cold afternoons. I am able to pop the top cover to check to see if I can feel the heat from the cluster coming up thru the inner cover hole. When I lived and kept bees in Ohio, there was usually a sign to tell me that a hive was alive. A snow covered top cover would have a small melted area showing the bees clustered below were generating heat. A slight knock on the side of the hive would produce a familiar buzz and I knew there were bees alive.



This is a diagram that I have used from Tom Seeley's work on the thermoregulation of honey bees. This is a diagram showing the temperatures within a hive. I have converted the Temperatures from Celsius [$^{\circ}\text{C}$] to, Fahrenheit [$^{\circ}\text{F}$].

A small cluster of bees must expend more energy to keep warm than a large cluster.

When brood is being reared during cold weather, the cluster will maintain a temperature at the center of the cluster in the range around 92°F . When no brood is present the cluster will maintain a lower temperature and it is interesting to see the variation of temperature in a hive recorded by a temperature sensor. I have made an arrangement with Cary Orange to share information on the data he has collected from his hives using temperature sensors. This will be coming up soon – related to data collection including the value of collecting temperature and weight of bees.

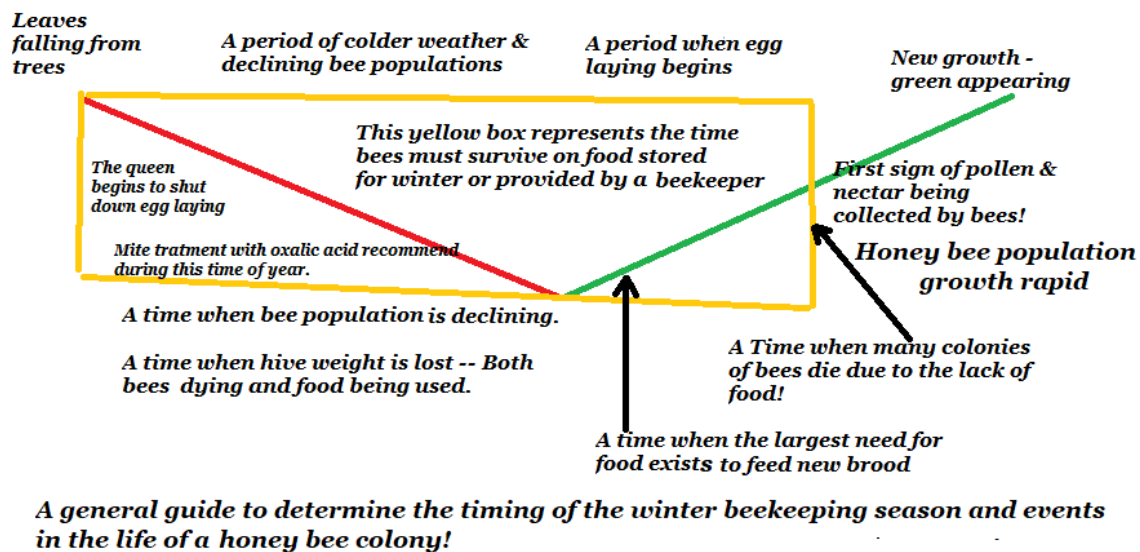
The time period from fall thru spring varies considerably upon where one lives in the U.S. Most of the readers of this newsletter live in the eastern part of the U.S. Some live in north

western states including Wisconsin and at least one in southwest Texas. Even a few living in the Thompson River Valley near Kamloops, British Columbia. I often think of them and their bees and how little I understand of their management time lines.

It is impossible to give one single answer to what one does with bees at any one particular time. Our weather patterns can generally be predicted but it has been a long time that one could do any ice skating in Raleigh. I went thru the blizzard winters of 1978 and 79. I also remember a time in 1950 when Ohio got a surprise snow storm closing down major highways and then again Atlanta a few years ago faced a similar problem.

The winter honey bee cluster is a remarkable creation of nature. While we as humans have to put up with the discomfort of weather temperature changes – think of power shortages, ice and snow on roads, and running out of milk. The honey bee has the ability to adjust the cluster temperature to fit its needs and a food supply placed where the bees can nourish themselves. It is not uncommon for bees to be placed in winter storage without any chance to fly for a number of months. I have talked to a beekeeper in Dawson, Yukon Territory of Canada who buries hives in snow during the long winter season and they survive.

The time line I am sharing with you must be adjusted to where you live. North Carolina is not Ohio. Ohio is not the upper peninsula of Michigan. Texas and Kamloop are – well keeping bees adjusting to what the weather there gives to them and their bees.



Winter management of a hive should be taken care of when fall weather allows frame manipulations. As many of you know, fall weather is somewhat like a rollercoaster. Some days will be cold, some cool, and some warm.

Management of a hive for during cooler or cold temperatures:

- 1) **Moisture is a major problem. It is a bee killer! Langstroth warned beekeepers about the danger of not ventilating a hive of bees. If there is warm air moving upward in a hive, it will certainly carry moisture up to the inner cover. Moist air will condense on any object. Hives with upper entrances and inner covers with notches and a center opening provide the moist air a place to condense and/or escape from the hive.**
- 2) **While I am talking about moisture, any beekeeper feeding dry granulated sugar around the inner cover hole or above a shim as used in the Mountain Camp method can attest to the fact that honey bees use the moisture from the hive to dissolve the sugar.**
- 3) **Good queens can be recognized at this stage of beekeeping. Bee populations to carry a hive thru winter are easy to recognize.**
- 4) **The bees one observes in a hive now are winter bees. They will live longer than the normal bee age of 40 days.**
- 5) **Most hives at this point in the season should have at least 60 pounds of stored honey/sugar stored food (As many text books say). If not that amount, the beekeeper needs to be feeding to supplement what a hive does have.**
- 6) **The last item I check is how well the hive is sheltered against wind. Wind breaks of trees, buildings, and fences are a help to a hives survival. Make sure hive covers do not get blown off hives!**

Some pictures to help you think about winter!

