

STAHLMAN BEEKEEPING

NOTES FOR 2023

Issue # 35 September 9-16-2023 Recovering Beeswax
(Part 1)
Getting beeswax:



When produced by the honeybee, wax scales



are white. New comb can easily be

identified by the white comb being built.

The color of comb is affected by travel stain and brood raised in it.

Old brood comb for example is a very dark Chocolate brown.

Beekeepers should save any wax removed from frames during management of the hive. I have seen beekeepers just abandon wax on the ground around a bee hive.



- I save wax in 5 gallon buckets until I have enough to put into the wax melter.
- If the saved wax is not processed in a timely manner during the summer season, wax moth will undue all of your efforts to save it.

- Bees wax can be stored for a long period of time once it is processed.

Each year I try to replace frames that contain dark comb 5 years old, as well as frames that are messed up. As frames of comb age, I move them from the middle of a box to an outside position. Thus, the queen has fresh newly drawn comb in which to lay eggs in the brood chamber.

IMPORTANT POINTS



One must be very careful when working with wax. Burns are common and it's flash point is low.

A beekeeper laid a cigarette on a hive he was working and he was distracted for a few minutes. This was the result!

Wax melts at 148°F plus or minus a degree.

Wax is made up of alkyl esters of fatty acids and hydrocarbons. Wax floats on water but it can easily be combined with solvents to alter its chemical make-up. Beeswax can be used for making soap, lip balms, polish, candles, and many other things.

The # 1 use is:

The cosmetic industry

They use beeswax for a number of products.

[Lip Balms, creams, salves, and ointments]



I use plastic foundation inserts which makes it easy for me to recycle frames without the need to buy new foundation.

Let me explain why I do this:

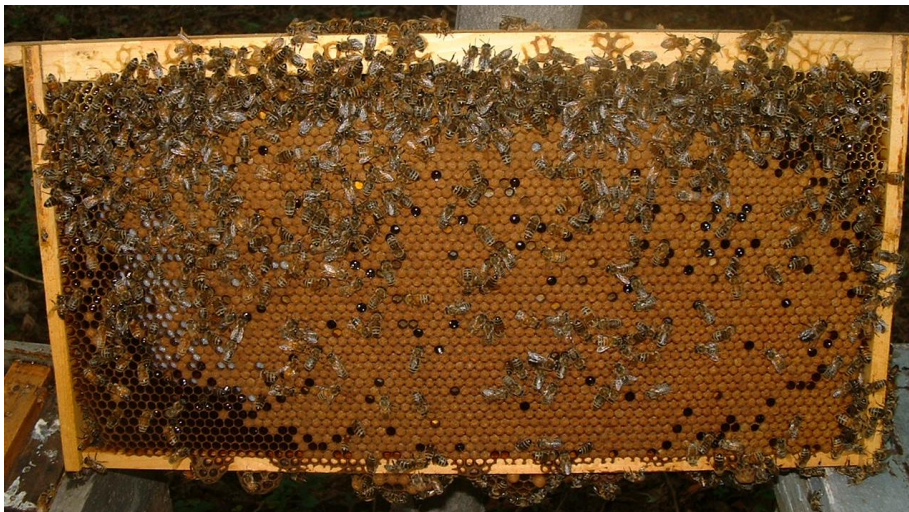
- Bad comb in the brood chamber reduces cells for the queen to lay eggs.
- The build-up of pathogens according to all I read may be the cause of hives failing. Certainly dark comb is

attractive to wax moth and small hive beetles.

- Frames filled with pollen are good for hives building up brood. But when a frame is full of pollen it can cause problems. Pollen cells on a frame can be scraped off and the frame then can be re-waxed as will be explained later. The cells of pollen can be set aside (frozen) and mixed with sugar patties used to feed bees in the spring.

Not only are my bees providing me with honey as a product of the hive, I am getting wax which in my opinion is as valuable as the honey produced.

A standard deep frame will contain about 3,500 worker cells per side. Thus 7000 possible cells are available for each brood cycle every 21 days on just one frame. Often pollen and honey are stored in the upper corners and cells around the brood which reduces this number somewhat. Below is a good frame of brood – [something we like to see] because the number of bees in a hive are a key to a hives survival and honey gathering ability.



Compare this frame with the frame below.

- Note the lack of drone cells on this frame.
- Note how many cell are being used to raise brood..
- Note this is a frame with dark comb – most likely several years old.



Note the color of this frame.
It is about the same age as the frame above.

- The foundation is black plastic – same as the frame above.
- The bees do funny things with plastic foundation – often not drawing comb as it should be. This type of comb building on a

frame should be spotted early and the burr comb scraped off so the bees would do the job correctly (as we humans expect of bees). However, regardless of its age, this is not the kind of frame that that will support “good population growth” in a hive.

Frames like this should be culled and rendered for wax, the frame and plastic foundation can be used again.

Processing dark wax comb will be covered in Part II Issue #36

One of the time honored ways of getting bees wax is to melt down cappings taken when honey is extracted.



This is Sharon, one of my former students, using my extractor. This is not an ideal set up but it works with a super or two.

First, before honey can be removed from frames, the



cappings over the honey must be removed!

Usually a knife is used but capping scratchers are in common use.

Cappings are collected in containers – buckets to larger equipment designed to not

only hold the cappings but to allow the honey to be separated from the cappings.

Separating wax from the honey can be carried out in various ways:

1. If one exposes wet honey frames outside, bees will begin a robbing frenzy. The same can be said of placing cappings outside with the result that the bees will carry away the honey and leave the wax. However, one can save a lot of honey by allowing the cappings to drain over night.
2. Capping can be placed in a bag (remember the day of silk stocking?) And hung to drip over a container.
3. Another method used is to press and squeeze the cappings until most of the honey is removed.
4. Another method used is to place wire baskets holding cappings in an extractor and the honey spun out.
5. Because wax will float above honey, the capping can be placed in a solar wax melter. The container collects both wax and honey which can be separated when the wax cools. There is a problem with this because the honey is heated to a level that causes some damage to honey -- Over heated honey is darker, often the taste is off, and any health benefits are lost.

Wax can be processed using hot water, steam, hot air, or radiant heat. Some methods are: a wax press, a steam chest, a pan or pot (not iron) over a heat source, or a solar wax melter.

Just keep in mind that wax is stained easily. If heated in water the water temperature should not reach boiling levels. The samples shown here are from my solar wax melter. Note the different colors -- each batch of wax may produce a different shade of yellow. From very light yellow to darker richer colors of wax.

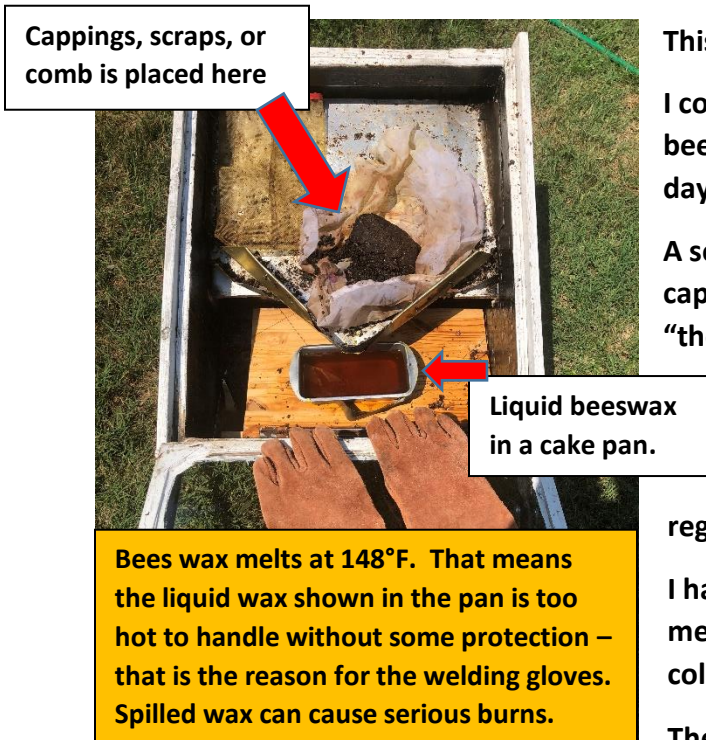


If one is using hot water to render wax:

- The heat used to heat water must be controllable. If by accident, the water gets too hot -- begins to boil -- a number of bad things can happen.
 - I know of beekeepers that processed wax in the family kitchen with the result -- the house caught on fire.
 - A huge clean up of wax can cause problems -- wax is not easy to clean up unless you have steam heat available and a place for steam water to run.

Wax can be melted to be used to pour into molds without the use of water. However, great care must be taken to avoid overheating the wax.

How I handle wax sources [cappings, old brood comb, or scraps accumulated from working my hives].



This is my wax melter.

I consider a wax melter an essential piece of beekeeping equipment. It can be used during hot days of summer.

A solar wax melter works on the principle of capturing heat within a confined area. It is called “the greenhouse effect.”

The problem is solar heat can get very hot. I have measured temperatures as hot as 157° in my wax melter. Temperatures are regulated by the intensity of the sun.

I have in past issues described how to build a wax melter. It is just a box with a glass lid that will collect and hold the sun’s heat.

The major features are:

- It must be used on clear hot days.
- It must have a tray to allow melted wax to collect.
- If allowed to run down a slope, wax cappings or comb can be separated using a filter – I use white filters – could be an old bed sheet.
- Do not use iron metal containers or filters which contain dye. Iron stains wax. The filters will color your wax with the dye in the filter. One note: If you want green wax, try using a filter cut from blue cloth.
- Processing wax this way leaves a clean block of wax when cooled.
- See those gloves in the photo, if you need to remove the pan prior to the wax setting up – that pan will be the same temperature as the wax in it. One will need heavy gloves – that is the reason for the welding gloves in the photo.

Other notes:

Wax is best processed using stain-less steel pots or pans. **Alumimum** works fine for me.

The yellow color of beeswax is due to pollen. However darker colors may indicate a mixture of propolis and wax contaminants in the wax.