

All About Beeswax

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SAZBA MEETING



What is Bees wax and where does it come from?

- Bees wax is a fatty secretion from wax glands of worker honey bees.
- Chemical components of beeswax vary across bee species but are quite consistent across location within species.



What is Bees wax and where does it come from?

- *Apis mellifera* will form and reform beeswax into combs consisting of two different sized cells (Drone cells and worker cells)
- The beeswax cells constructed by worker bees can be used to store pollen (beebread), nectar/honey or to rear brood.



How to get bees to draw comb on frames

- Honey bees will build comb to fill open space within their hive.
- It can sometimes be tricky to get bees to build comb properly on frames where it is desired
- A lack of drawn comb will limit hive growth and honey production
- Bees that are well fed or on a honey flow will build comb quickly
- A colony with a large population of young to middle age bees will be well suited to comb building

How to get bees to draw comb on frames

- Frames with well waxed foundation will be drawn out better and faster than dry foundation
- Checkerboarded frames will usually get drawn out faster
- Make sure undrawn frames are placed tightly together rather than spaced out (spacing encourages burr comb production)
- Feed thin (1:1 or thinner) syrup to hives to encourage drawing comb
- If starting with a package or nuc it is recommended to feed continuously until your bees have drawn out on whole brood box

Properties of Beeswax

- Plastic at room temperature
- Low melting point 145-150F (62-64C)
- Beeswax begins to discolor if heated above 185F
- Flammable, Flash point of 400F
- Quite inert to many substances

History of beeswax use

- Beeswax has been used to make candles since ancient Egypt as long ago as 300BC (candles were made from wax or tallow, wax being preferred)
- Beeswax has had uses in medicine, cosmetics, metal casting, waterproofing, as an adhesive and many other applications through history and in modern time
- Modern vegetable and petroleum waxes are cheaper and have replaced beeswax in many modern applications



How do beekeepers harvest beeswax?

- Honey cappings – obtained when uncapping frames of honey



How do beekeepers harvest beeswax?

- Burr comb – out of place comb built in hives that beekeepers clean out



How do beekeepers render beeswax?

- **Warning Beeswax is very flammable so be very cautious when rendering wax, especially over heating and around open flames**

How do beekeepers render beeswax?

- **Oven Method** – Set oven to 160-180F. Place cappings or burr comb on a queen excluder with some cheese cloth on it. Set on top of a deep pan. Place in the oven for 3+ hours. Remove from the oven and let cool. In the pan you will have a layer of bees wax and a layer of melter honey.



How do beekeepers render beeswax?

- **Stock pot method** – Fill a large stock pot 1/3 to half way up with water then warm on a stove to 150-175F. Do not boil the water or over heat (185+). Add cappings or burr comb to the warm water and wait until completely melted. Strain the water/wax/honey mixture and let cool. You will be left with a wax layer on top and a water/honey layer on the bottom.

How do beekeepers render beeswax?

- **Melting tank method** -
Cappings or burr comb are put into a water jacketed tank and heated until completely melted then the contents of the tank are drained and strained leaving a layer of beeswax on top and a layer of “melter” honey on the bottom.



How to use rendered wax for beekeeping

- **Wax plastic foundation**

- For better acceptance of foundation and less likely occurrence of burr comb
- Can be applied cold by rubbing wax on the foundation with good pressure like coloring with a crayon
- Can be applied hot with a paint brush or roller
- I wax foundation that I have scraped clean after wax moth damage to get bees to reuse

How to use rendered wax for beekeeping

- **Make beeswax foundation or starter strips**
 - Use a foundation roller or mold to make your own foundation
 - A good practice for sustainability and purity focused beekeepers



How to use rendered wax for beekeeping

- **Wax dip hive boxes to weatherproof**
 - Typically done by larger scale beekeepers as it requires a lot of wax and a large enough tank to submerge a whole box
 - Often done with paraffin wax due to cost



How to use rendered wax for other things...

- **Candles** – Can be made by dipping wicks repeatedly in a pot of hot wax or by pouring wax into molds or containers with an appropriate wick in place. Wick choice is important to get good burning candles.



How to use rendered wax for other things...

- **Cosmetics (lotions, lip balms, ect.)** - Beeswax is a primary component in lotions and lip balms
 - **Lotion** – melt beeswax and mix in olive oil and essential oils to scent and let cool
 - **Lip balm** – Melt bees wax and mix in coconut oil or almond oil, vitamin E oil, and peppermint essential oil.



How to use rendered wax for other things...

- **Finishes/preservatives for wood and other materials** – Mixing Beeswax with mineral oil, linseed oil, or turpentine can make a finish for wood furniture and surfaces



How to use rendered wax for other things...

- **Plastic free food wraps** – Thin cotton cloth coated in beeswax with some pine resin and jojoba oil can replace plastic wrap and baggies for many food storage applications



Thank you for attending the meeting!

- Questions
- Upcoming events