

## BEESWAX PROCESSING – 2 METHODS

1. **DIY SIMPLE SOLAR WAX MELTER**
2. **SLOW COOKER (CROCK POT)**

### BEESWAX SOURCES:

**Best** – Wax cappings from honey extraction process. This is the cleanest, newest source of beeswax & makes the best wax for candle making & crafting lip balm & skin creams. A cold knife yields best results as a hot knife darkens the wax. After wax cappings drain in the de-capping tub for at least 24 hours store them in zip lock bags in freezer or in clean 5 gallon bucket with tight fitting lid in a cool location (basement is good) until ready to process.

**2<sup>nd</sup> Best** – Save wax from scraping burr comb & recycling old frames of wax. When processing, don't mix older dark comb with extraction wax cappings. This will darken the finished wax product. The end goal is to produce a pale yellow wax. Darker wax is fine for workshop purposes or coating plastic frames.

**OPTIONAL SOLAR WAX MELTER PROCESSING STEP** – Use honey or paint filter to rinse cappings outdoors using a watering wand or spray nozzle. Work fast as the bees will come to investigate. **DO NOT** rinse wax indoors in your sink. Wax will clog the drain pipes. This step is entirely optional but worthwhile as rinsing results in less honey trapped in wax after the first round of rendering.

### PHASE 1 BEESWAX PROCESSING:

#### Beeswax Processing Method 1 – Construct a Simple Solar Wax Melter from Items on Hand

Solar wax melters are available in bee supply catalogs for \$135. Most beekeepers already have on hand everything they need to assemble a simple solar wax melter that will process their beeswax. If they don't, the items needed can be easily acquired at thrift stores or yard sales.

#### SIMPLE SOLAR WAX MELTER COMPONENTS – ASSEMBLE FOLLOWING ITEMS:

- Old cooler minus its top;
- Black spray paint to paint inside of cooler;
- Storm window or other large piece of plate glass (picture frame glass) to cover cooler;
- Small plastic tub to fit inside cooler;
- 2 – 3 inches of water in bottom of small tub for melted wax to float on top;
- Filter material for wax – lint free fabric such as old sweatshirt (best), shop paper towel, panty hose, old bed sheet. **Do not** use cheesecloth - too much lint;
- Metal clips from hardware store to hold filter onto tub;
- Optional – Basket fashioned from wire (fencing, chicken) to fit over tub & hold wax & filter;
- Warm sunny day of 80 degrees or more. This phase is done outdoors.

When all components are assembled, put wax cappings on top of filter material over tub inside cooler. Top cooler with glass. Assure there are no gaps between cooler & glass or there will be dead bees inside the cooler soon. Use painter's tape if needed to close gaps. Wax will melt quickly on a hot, sunny day so replenish wax on top of filter periodically. Check every 30 – 45 minutes for melting progress. I use the same filter all day. The wax cappings will melt through the filter & float on top of water in bottom of tub. Melt wax throughout day. Leave entire assembly in place over night so it will cool & wax on top of water in the tub will harden. Remove filter & tub from cooler in the morning. Remove filter from top of tub. There will be beautiful pale yellow chunks of wax floating on top of the water in the tub. Remove wax & store in plastic containers (I use zip locks or Folger's coffee containers) until ready for phase 2 of wax processing. I pour the cooled water on my flowers & vegetables. The wax encrusted filter makes a great fire starter for campers. Or, if you want to squeeze the last drop of wax out of the filter, stuff an old pantyhose leg with used filters. Tie a knot in the

top so none of the filters escape. Toss the filters in a pot (an old turkey fryer pot is good) of water & bring water to boil on gas cooker outdoors. Boil for at least 1 hour. Turn off & let cool overnight. Skim hardened beeswax off top of water in morning. This wax may be darker than your premium wax derived from filtering but it will still be pretty nice.

### **Beeswax Processing Method 2 – Slow Cooker (Crock Pot) – Assemble Following Items:**

- Slow cooker with lid – I use a 6 quart size.
- Slow cooker liners - Big plastic bags made specifically for slow cooker.
- Plastic coffee canister with bottom cut out for use as wax cappings funnel.
- Nylon panty hose or knee high stockings; I use Queen-size panty hose from a dollar store.
- Water
- Wax Cappings

### **Wax Cappings Preparation for Slow Cooker:**

- Rinse wax cappings outside with garden hose & spray nozzle. Do not skip this step when using slow cooker method. We're working with wax in a smaller scale in a smaller melting device. Cleaner cappings will yield cleaner wax. I rinse the cappings outdoors using an old honey filter & fiberglass sink, then put the drained cappings in a clean 5 gallon bucket until ready for melting.
- Cut legs off panty hose;
- Clean cappings are stuffed into a panty hose leg using a plastic coffee canister funnel.
- When leg is full of cappings, tie open end of stocking into a knot. Double bag this single panty hose leg into other stocking & tie open end into a knot.
- Set up slow cooker:
  1. Place 2 liners in slow cooker.
  2. Fill slow cooker 1/3 full with water.
  3. Add cappings stuffed stocking to slow cooker & cover with lid.
  4. Set slow cooker to medium heat & cook 2-3 hours. Wax will flow out of stocking & float on top of water.
  5. Turn off cooker. Carefully remove stocking & let cool. It can be used as a fire starter later. Let wax cool in slow cooker overnight. It will harden & can be lifted from the slow cooker.
  6. Empty water from slow cooker outdoors. Remove liners from slow cooker pot and throw away. Do not re-use liners.
- Wax Yield Example – I captured 1 lb. 5 oz. of beeswax from 2 lb. 6 oz. of cappings using the slow cooker method.

### **PHASE 2 BEESWAX PROCESSING – PRODUCE WAX READY FOR CRAFTING – IMPLEMENTS NEEDED:**

Phase 2 will refine the beeswax further and remove any remaining honey or other sediments still trapped in the beeswax. After Phase 2, the wax will be ready for candle making and other crafting uses.

Wax processing items should be dedicated to this task. Don't use your favorite cooking pots. The following items will be needed for Phase 2:

- Beeswax chunks from solar wax melter or slow cooker;
- Hot plate (don't try this over an open flame!). The melting point of beeswax is 143 – 151 degrees Fahrenheit (F); the flash (burning) point of beeswax is 490 – 524 degrees F;
- Fire Extinguisher (I've never needed it but better safe than sorry);
- Old sauce pan to serve as bottom part of double boiler;
- Seamless pouring pots. Find at Michael's, Hobby Lobby, or JoAnne's & use their 40% off coupon; At least 2 pouring pots are needed (one as part of the double boiler & one to receive melted wax from the double boiler for filtering);
- Filter material (sweat shirt, panty hose, old sheet, etc.);
- Clips to secure filter to second pouring pot;

- Molds – Candle making molds (I prefer the polyurethane molds for candle making) or plastic containers for wax storage until you use the wax for crafting and/or candle making. Think yogurt, cottage cheese, margarine cartons or even ½ gallon milk cartons for wax storage;
- Butcher paper turned wax side up for covering work surface; this makes clean-up easier;
- Skewers for stirring (I use cheap wooden skewers);
- Wax thermometer;

When items are assembled, put chunks of wax from Phase 1 in pouring pot. Fill sauce pan 1/3 – ½ full of water. The pouring pot will displace water in sauce pan so don't over fill with water. Put pouring pot with wax into sauce pan of water. Put sauce pan with pouring pot onto hot plate & turn on. Bring water in pan to boil. Wax will melt at 143 – 151 degrees F.

**NOTE: Wax processing requires your complete attention. DO NOT leave melting wax unattended.**

When wax in pouring pot has completely melted, remove it from double boiler & pour melted wax through filter on top of second pouring pot. You may see honey and/or sediment in bottom of pouring pot from double boiler. Pour the wax slowly through filter, leaving honey/sediment in bottom of double boiler pouring pot. The wax in second pouring pot is now ready for candle making & other crafting. If you are not ready for crafting, pour the wax in molds for storage. I prefer 1 – 4 ounce blocks for my crafting purposes but use whatever size suits your needs.

**Candle Mold Sources:** Mann-Lake has a good selection of candle molds. Other beekeeping supply catalogs also have candle making supplies. Be sure to buy the correct size wick for the mold. The catalog will specify the size wick needed for the mold. Ceramic cookie molds are good ornament molds. Brown Bag cookie molds (discontinued but available on EBay) make beautiful wax ornaments.

**Candle Release:** After candle has cooled, mold release can be aided by putting the mold in a freezer for 30 minutes. The wax will contract & release from the mold. A product called Mold Release is also very helpful in removing candles from molds. Beeswax candles burn dripless and smokeless with faint honey scent.

**Wax Bloom:** This is a frosty white coating that appears on beeswax over time. It is harmless & can be removed by rubbing with a soft cloth or warming the surface with a blow dryer. The bloom disappears at 102 degrees F. Bloom has no adverse effect on the way a candle burns.

## MAKING CANDLES, CREAMS, & BALMS WITH BEESWAX

**NOTE: When working with hot, melting beeswax never leave it unattended. Beeswax' flashpoint is 490 – 525 degrees Fahrenheit (F). The melting point of beeswax is 143 – 151 degrees F. Ideal pouring temperature of wax is 150 – 170 degrees F.**

### CANDLE MAKING – ITEMS NEEDED:

- Beeswax;
- Hot plate; do not melt beeswax over an open flame!
- Fire extinguisher (you may never use it but better safe than sorry!);
- Double boiler components – sauce pan for boiling water & pouring pitcher for melting wax;
- Wick & wicking needle;
- Bobby pins or popsicle stick for centering wick;
- Mold(s);
- Digital Scale;
- Wax thermometer;
- Chop sticks or similar item for stirring;
- Mold Release;

**MOLDS** – Candle molds may be purchased (Mann-Lake is one good source). I prefer the rubber like polyurethane or silicone molds over the plastic molds) or they may be made from household items. Container candles can be made from items like small jars or coffee cups.

**WICKS** – It is important to have the right size wick for the candle or it will not burn efficiently.

#### **Mann-Lake Wick Guide:**

60 Ply Wicking: >3" diameter candle

2/0 Wicking: 1" – 3" diameter candle

4/0 Wicking: <1" diameter candle

Ready-made wicks with a wick holder tab can be purchased for container candles or tea light candles.

### CANDLE POURING – INSTRUCTIONS FROM 2016 MANN-LAKE CATALOG

Lightly spray mold with Mold Release (repeat after 3-4 uses of mold). Use a wicking needle to thread wick through bottom of mold. Pull the wick so that it's about 6" longer than top of mold. Leave the wick at bottom of the mold long so when you remove candle, the mold re-wicks itself. If your mold has a cut in the side make sure the seams are aligned properly so there will be no need for seam repair. Secure the seams in place with a rubber band.

Secure the wick over the mold. Bobby pins or popsicle sticks work will for this purpose. The wick should be centered & straight but not too tight. A wick too tight or too loose will affect the way the candle burns. Pour melted wax into the mold **SLOWLY**. This prevents air bubbles from forming. The slower the candle cools the better it will turn out. When candle is completely cooled remove it from mold & trim wick at top & bottom of candle. The mold is now wicked & ready for next pouring. If the bottom of the candle is uneven, heat a metal pie tin to gently warm bottom of candle to flatten it out so the candle sits level.

**WAX ORNAMENTS** - Beautiful wax ornaments can be made with ceramic cookie molds. Discontinued Brown Bag cookie molds in beautiful patterns can be found on Ebay. When making a beeswax ornament spray the mold with Mold Release. Pour the melted wax into the mold **slowly**. Before the wax completely hardens insert a small piece of wooden skewer

into the top of ornament for a hole. When the ornament has completely cooled, remove from mold. Gently work skewer through the wax ornament. Thread a narrow ribbon through the hole for an ornament hanger.

### **CREAMS & BALMS – ITEMS NEEDED:**

Nutrient rich skin creams & lip balms can be made with recipes that include beeswax.

- Hot plate; do not melt beeswax over an open flame!
- Fire extinguisher (you may never use it but better safe than sorry!);
- Double boiler components - sauce pan for boiling water & glass measuring cup for melting ingredients;
- Digital Scale;
- Wax thermometer;
- Chop sticks or similar item for stirring;
- Containers (small jars & pots with lids, lip balm tubes);
- Plastic coated freezer paper for covering work surface-makes for easy clean-up;

There are many recipes for skin care creams & lip balms including beeswax that can be found in books & on the internet. Here's my favorite hand cream recipe:

4 oz. beeswax  
4 oz. cocoa butter  
6 oz. coconut oil  
5 oz. sweet almond oil  
¼ tsp. mango fragrance (optional); use your favorite essential oil or add no fragrance at all.

Melt beeswax, cocoa butter, & coconut oil in specified order. Beeswax takes longer to melt than cocoa butter & cocoa butter takes longer to melt than coconut oil. Sweet almond oil is liquid. Mix sweet almond oil in after all other ingredients are melted. Add fragrance last & mix well. Your mixture will be entirely liquid. Working quickly, pour liquid into prepared jars. This recipe will fill one (1) dozen 2 oz. jars. Cover filled jars with clean paper towel. When cream has hardened, put on lids.

Jar Preparation: I wash jars & lids in hot soapy water & rinse in a 5% bleach solution that is made by adding one (1) tablespoon unscented chlorine bleach to one (1) gallon hot water. I then thoroughly dry the jars & lids before filling with melted ingredients.

Here's my favorite lip balm recipe:

2 Tablespoons coconut oil  
1 Tablespoon grated beeswax  
2 vitamin E gel capsules

Melt beeswax first & add coconut oil. Cut vitamin E capsules & add oil to liquid beeswax & coconut oil. Discard capsule when empty. Stir well to blend ingredients. Pour liquid into prepared lip balm tubes or small lip balm pots. I use the same preparation specified above for my hand cream jars.

SpecialtyBottle.com – Good source for small jars for creams & balms.

LorAnn Oils – Good source for essential oils & food grade oils.