

# BEE BREW AND SUCH

## Hot and Dry Weather Syrup

- 1 part sugar
- 3 parts water

This is recommended for extreme hot/dry weather. Rule of thumb: the weather determines the formulation used.

## Light Sugar Syrup

- 1 part sugar
- 1 part water

Mixes well in very hot tap water. Used to stimulate the brood rearing processes in the spring, never in the fall.

## Intermediate Sugar Syrup

- 1.5 parts sugar
- 1 part water

Used when installing packages and when administering medication, such as Fumagilin-B<sup>®</sup>. Best syrup mix for late summer and very early fall when the temperature is still high and the humidity is low. To build winter population.

## Heavy Sugar Syrup

- 2 parts sugar
- 1 part water

Used in mid-fall to build stores and in late winter to carry bees into spring when not using Bee Candy.

## Special Note

In times when the bees slow down in their consumption of syrup, mold will grow on the liquid and the sides of the feeder. Little effect on the bees will be noticed, however fermentation is a problem with their digestion so change the syrup often. You may defer the mold by adding 2-4 tablespoons of filtered Apple Cider Vinegar and/or 1 level teaspoon Cream of Tartar. Some even use Clorox added to the syrup, but I have not tried this and hesitate to do so.

## Bee Candy (Cooked)

10 lbs sugar  
3.5 cups water

Bring the water up to boil with the cover on the pot, then slowly add sugar stirring until dissolved and re-cover. Continue to stir occasionally and re-cover until the brew comes to a boil. Keep the lid on for a few minutes to run the condensate down the sides.

**Note:** Replacing the lid will become important when doing consecutive batches as it helps prevent caking on the sides. The temperature will reach the desired 242° F when enough water has boiled away.

Take whole pot, sit it in cold water in sink and whip/stir vigorously. **Careful—this stuff is hot!** When temp gets down to 200°–210°F start the pour. Do not waste time as the set starts quickly. The second batch can quickly follow by putting the water and vinegar in the same pot and bring to a rolling boil with the lid in place so the crusted sugar will wash down. Then slowly add the sugar.

**Hints:** I use a pot with glass top so I can keep tabs on the brew to avoid a boil over. I use a Turkey-Fry thermometer that is a dial with an extra long probe. I run the temperature up to 242 ° F. I have many batches to do so I do not clean up the pot until I have completed the season. Keep any sugar off the outside of the pot.

**Note: Cooked fondant is dangerously hot and must be handled with extreme care. The following “No-Cook” method is much easier and works just as well.**

## “No-Cook” Bee Candy – (a.k.a Sugar bricks)

10 lbs sugar  
1 cup water  
1 teaspoon white vinegar

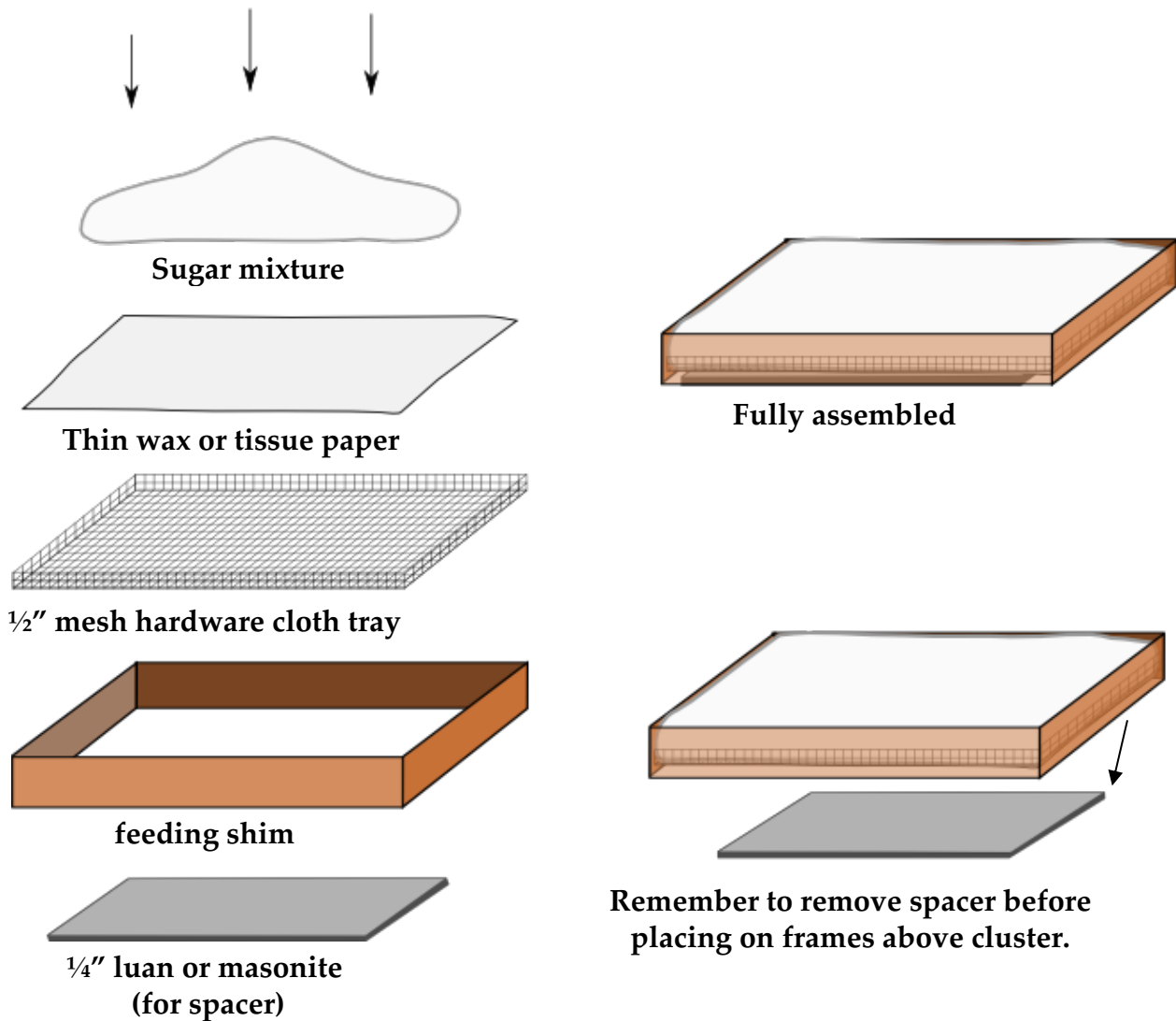
Mix the vinegar and water, then add sugar. Stir thoroughly, resisting the temptation to add more water. It will initially be a crumbly mass. You can pack this into a loaf or brownie pan and rest it directly over the cluster on the top bars. Using a few sticks as spacers will improve the bees’ ability to access more of the surface. Or, you can prepare a special feeding shim as below:

Feeding shim: same overall dimensions as a hive, or nuc, just not as deep, (1 ½” – 2” or so). Cut a piece of ¼” luan or masonite to fit **loosely inside** (can be an inch or so smaller). *Refer to diagram following*

Bend the edges of a piece of ½” hardware cloth to fit inside the shim, rest it on top of the luan sheet and staple the sides to the inside of the shim. Cover with a sheet of lightweight wax paper, or the tissue which separates wax foundation is ideal.

Pour the mixture on top of the paper, packing it firmly. You can also imbed a slab of pollen supplement within. If using on a nuc, make sure sugar slab is at least 2” thick. Let set overnight.

When the mixture sets up, *remove the luan sheet*, (its purpose was to support the wet mix and to allow space for the bees to rise to the bottom surface of the sugar.) Place the box on top body so it is directly over the cluster frames, immediately over the brood nest. Place inner cover and telescoping cover over the shim.



## FEEDERS

1. **Boardman:** Designed to fit in the entrance. Do not use this feeder in the chilly spring or in the fall as a front entry feeder. Bees will not leave the cluster to go down to get syrup. Great for feeding water during periods of drought. Could lead to robbing if used during mid-summer through late summer, during dearth periods.

2. **Baggie:** Recommended when installing packages. It is easy, inexpensive and provides some insulation for the new queen. Use heavy-duty 1-gallon freezer bags. Fill with 1/2 gallon of liquid. Place two of the bags on the top bars of the top box with the top of the bags facing each other in the center of the box. In my recommended queen-cage placement the front bag covers the cage. Properly done this will not block the queen and the feeding screen is in the open between two frames. With no comb normally in a beginners boxes this is an easy, sure-fire way to introduce the queen.
3. **Pail:** These are available commercially. They have a stainless steel screen through which the bees feed when the pail is inverted over the top bars or the escape hole in the inner cover. These pails are available in 1- to 3-gallon sizes. It is best to protect them with an empty box. I have used them but I do not list them on my preferred list.
4. **Jug or Jar:** Several configurations are found depending on the beekeeper's need. When I had commercial pollination hives I fed with a 1-gallon jug inverted into the top cover. The lid of the jug was modified either by punching about six 1/16-inch holes from the inside of the lid very close to the center of the lid in an area about the size of a dime.  
One can use a large-mouth gallon jug inverted over the inner cover with holes of the same configuration as above. (**NEVER USE PLASTIC JARS**; they collapse.)
5. **Hive Top:** These come in all sort of configurations. (NOTE: The hive must be level.) Be sure there is a way for the bees to get to the syrup without drowning and that they are confined to the feeding entry and not the whole top of the feeder. If the bees have entry to the reservoirs of the feeder one may staple nylon screen to the top of the floats to cover the float and the syrup area totally. The bees will feed through the screen and not fall in.
6. **BeeMax® Hive Top Feeder:** Very good feeder as the bees are not exposed to the outside air and can be seen feeding when the conventional hive top units have no activity. Care must be taken to prevent the mold to which these feeders are very susceptible. We plan to utilize more of this large feeder where needed.
7. **Division Board Feeder:** This unit replaces one of the frames in the hive. Generally there is a float or screen to help keep bees out of the syrup. It is necessary to open the hive to feed therefore is objectionable to some beekeepers.
8. **Thorne Rapid Feeder:** This is my personal favorite. The unit resembles a small bundt pan with an entrance cone cover and a reservoir cover. Very few bees drown in this feeder as it sits over the escape hole of the inner cover where the maximum internal colony heat is located therefore the bees are very agile and even when getting wet, crawl out and are cleaned immediately.  
It holds only one-half gallon and must be serviced quite often. **Note:** If you find a lot of dead bees in this feeder, my experience is these are robbers and the colony is in serious trouble or doomed.

**9. Group Feeder:** There are those that recommend this system of providing an open feeder for all the bees in the yard and/or the neighborhood to help themselves. Yes, I am as lazy as the next beekeeper. I have tried several configurations and none of them worked without losing thousands of my girls or setting up a mass robbing frenzy. **Never** do this during a dearth. Group feeding is risky under any circumstances, as robbing can be a real problem and if the feeders get empty, guess where they rob; right, your weaker colonies.

## **POLLEN SUPPLEMENTS --- POLLEN SUBSTITUTES**

A pollen substitute contains various ingredients to be a substitute for natural pollen. A pollen supplement contains natural pollen as an ingredient. Supplement formulas are numerous, therefore I recommend beginners use pollen substitutes until pollen is available from flowers.

Premixed and packed substitute is available from bee supply companies. Pollen substitutes come in powder or patty form. Dadant carries the new MegaBee<sup>®</sup> (The Tucson Bee Diet) that is probably the best on the market today.

It is possible to mix your own pollen supplement using this recipe. The pollen must come from your own bees and stored properly to avoid mold, disease and contamination.

### **One cake:**

2 ounces pollen collected from your own hives  
or 1 ounce Brewer's yeast and 1 ounce powdered skim milk  
6 ounces food-grade soy flour  
5-1/2 ounces water  
10-1/2 ounces sugar

Heat the water and dissolve the sugar, forming a heavy syrup. A 50-50 mix: pollen + pollen substitute is recommended. Mix the powders with equal parts pollen from your own healthy pollen-gathering colonies. Then add the heavy syrup to make a heavy dough consistency. Feed a glob (about 1/2-1 pound on the top bars over the cluster. **Do not feed commercially obtained pollen as it could potentially carry AFB and chalkbrood.**

*Large quantities?* You do the math.

## **GREASE PATTIES FOR TRACHEAL MITE CONTROL**

Solidified vegetable shortening (like Crisco<sup>®</sup>) mixed with granulated white sugar to the consistency of greasy dough patties, i.e., it will stay together and not crumble. Ratio of 2 parts sugar to 1 part grease. Put hamburger-size patty on piece of wax paper. Place the patty on the top bars near the brood cluster.

### **Notes:**

Tracheal mites are no longer a serious problem in Virginia.

Yards located in areas infested by the small hive beetle should not have grease patties during spring and summer. Beetles feed on them.

## MITE BOARDS

1. The best around is the computer-generated board developed at Penn State University. It has a random pattern of blacked-out areas, thus only the clear areas are counted. There was no delivery frame developed and one must create a screen covering if using a solid bottom board. Tanglefoot® is the compound used to entrap the mites. This will not entrap the small hive beetle, but it sticks to everything else, including beekeepers.
- 2 Another is a sticky board with a simple grid imprinted on the board to use as an aid in counting. It is provided with a vinyl-coated cover resembling stretched metal. Small sticks are used as spacers to keep the bees off the board and to prevent the bees from cleaning off the board. Tanglefoot® is the sticking agent.
3. A sheet of white corrugated plastic or white, hard fiberboard on which one sprays PAM® is advised. This is a practical board and makes mite counting in the field much easier, especially if one uses a shallow shim wired into quadrants reducing the area of concentration.

**Comment:** Both methods require space between sticky board and a screen. Since we advocate the use of screen bottom boards the simple conclusion is combine. Thus the Screen Bottom Board has a built-in provision for inserting a mite board or closure board. Both #1. and #2. sticky boards can be wrapped with Saran Wrap® and preserved.

Reading the bottom board is difficult but with practice the beekeeper can develop the ability to detect changes with the colony and conditions within the colony. Just a sample: detecting dysentery in its early stage in late winter or early spring when the board is in place for a longer period. One can also detect when the major spring brood rearing is underway.

## International Queen Colors

White	"	"	"	"	"	1 or 6
Yellow	"	"	"	"	"	2 or 7
Red	"	"	"	"	"	3 or 8
Green	"	"	"	"	"	4 or 9
Blue	is for years ending in					0 or 5

To help you remember this sequence, remember the phrase:  
“Will You Raise Good Bees?”