

THE PACKING BEEHIVE OF SERGIO JIMENEZ CATAÑO

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Abstract

The objective of this investigation was to find the form to make feel the bees, that each bottle is part of their home, and then they work in them, allowing us to retire them cleanly, without fracturing the honeycomb, not spilling honey, with the work finished by the same bees under the edge of the bottle, obtaining, a gorgeous, unfalsifiable honey and ready to sale, with an important extra price to our work. To turn a common beehive into a packing beehive is something very simple, and all the assistants will be able to practice it arriving to their place of origin, since the materials and tools that we need are of popular use. When the abundance of nectar causes that our bees need space to store honey, we place supers, if instead of empty frames or printed wax, the bees found round perforations, and on these, printed wax where they can construct their warehouse to store honey, therefore they will do it. If its construction is limited by the internal dimension of the bottles, to them does not matter, they fixe honeycombs to these and they will construct and then fill whichever bottles make the flowering possible. Materials and tools for production in a beehive are enumerated. Summary of the technique: In triplay or wood of 12 mm and 41 x 55 cm with perforations for each bottle (in my case, 30) and fixed additional covers in the corresponding perforation, bottles are placed with wax printed in the bee suitable form and on this each bottle is screwed, being placed in a beehive to rise that, having covered the bottles with a bucket and a ceiling, retiring and replacing the bottles full and sealed each one or two weeks, without smoke and shaking bees.

Keywords: Packing beehive / packed comb

Introduction (Fig. 1)

It would be wonderful if producing and extracting honey were as simple as going to the apiary and opening honey gate in every hive, filling up the jars. Looking for a way to arrive at such simplification of the process, I couldn't put a honey gate on my hives; instead, I jumped that step and now my hives give me full jars (Fig. 2). I don't uncap or extract, I just retire the bees, place a cap and a label, and I have a product



Figure 1

ready to sell, of a beauty as unbelievable as unfakeable, and that allows the consumer to get closer to the intimacy of the hive, admiring the works of art of nature, enjoying the smell, aroma and integrate properties of comb honey. With the assurance that all man did was make the jars and with an added value that multiplies our income per hive.



Figure 2

In beekeeping history, before the mobile frames and when it was used only in the hive body, beekeepers would place containers such as glasses, pots, etc. over the hives in the way of a honey super; Langstroth himself, the tale goes, became involved in beekeeping after becoming impressed when seeing a glass balloon full of comb honey. With the use of the mobile frames in honey supers and hive body, these containers stopped being used (Fig. 3). Going back in time, but with actual knowledge and resources, and to satisfy calls of the most demanding consumers, is what has led me to this new bee hive product.

When the abundance of nectar in the fields and the strength of the bees make our bees need more space to store honey, following the instructions of modern traditional apiculture we place honey supers with frames on top of the hive. If instead of frames our bees find round holes, and over these, stamped wax on which they can start building their storage house for honey, they will do it. If their construction is limited by the internal dimension of every jar, they won't mind and will fix the comb to the jar, building combs and filling as many jars as they can during the flowering season. Of course, the jars are in total darkness and protected from extreme temperatures, and the bees don't have access to their exterior.

Arriving to get to this technique the first research focused on finding the most practical way of attracting the bees to work inside the jars, and make them feel like each jar is part of their home, so they can use them to store their provisions. To this end, the jars were placed in different positions and provided with stamped wax in different shapes. Once I found the best possible way of placing stamped wax as the attracting "bait", I was able to have jars with stamped wax, but fixed to the hive, the frames and the cover. This caused fracturing of the comb and loss of honey when retiring the jars, ruining the aspect they have today. Clean, organic, intact since the bees finished their job; it became necessary to investigate the bees' response to several jar sizes, the distances between jars and hive parts, and how the bees would have access to the jars. The results of these investigations gave me the basis for the description of this technique, "The Principle of the packing hive".



Figure 3

The conversion to a packing hive of any hive of popular use, such as Jumbo, Langstroth, Layens, Kenya, and even rustic hives of the fixed system, is fairly simple and all the present readers of this congress can practice it at home, since the materials and tools we need don't require a specialized supplier and are of popular use: we can find them at the nearest hardware store.

Materials and method

Example for a single hive

If the hive is Jumbo, Langstroth or Standard.- One wooden or triplay board 9 to 12 mm ($\frac{3}{8}$ " or $\frac{1}{2}$ ") thick and 41x 55 cm (16" x 21 $\frac{5}{8}$ ").

- Hole of $1 \frac{1}{4}$ " or 32 mm.
- Best drill the holes.
- One high quality stamped wax sheet.
- A ruler 2.54 cm or 1" wide x 50cm or 20" long.
- A honey super of the jars' height.
- A honey super 1cm taller than the jars (the first can be the same as this one).
- Thermic inner cover and roof (or double roof).
- Amount of round jars that fit in the honey super, preferably with a maximum volume of 500ml and an interior neck diameter of no more than 56mm or $2 \frac{3}{16}$ ".
- An additional cap per jar, just for the first time.

- 1) On the triplay or wooden board, place the first honey super, so that two of its sides overhang approx. 2cm.
- 2) Place all the jars in the honey super, and trace the center on each one.
- 3) Drill over every center with the hole saw, saving the resulting circles from every hole.
- 4) Make the same perforation on the center of every additional cap.
- 5) With two metal screws, fix each cap to the triplay wood so has to match the holes, and to avoid deformity this table, nail it to the corresponding honey super (Fig. 4).
- 6) With the ruler, make 1" wide, parallel cuts on the stamped wax.
- 7) These strips are then cut 4 or 5mm less wider than the mouth of the jar.

- 8) With a knife and two cuts, make a slit on every strip of stamped wax, so that joining them will form a cross
- 9) Place a stamped wax cross over every perforated cap and screw or fit in each jar, leaving the cross inside the jar.
- 10) At the beginning of flowering season, place the honey super over a hive in honey production conditions.
- 11) According to the amount of nectar and the strength of the hive, every 1 or 2 weeks retire the full, operculated jars. To remove the bees, use the second honey super, placing it over a cover and with the top levelled with the entrance of the hive; put the jars face up and close the super, leaving a slit to the entrance; many bees will gather on the cover and others will walk back to the hive. Exits may also apply, but if it's being done from one day to another, the jars are easy prey to moths, and this we know only weeks later.
- 12) As in the honey super, work is more intense at the center; upon retiring the center jars, those are placed more to the sides, and in the outer holes new jars are placed.
- 13) With the resulting pieces of the wood perforations, a metallic soda or beer cap and two nails, make stoppers to seal the outer spaces at the end of the flowering season, as the outer jars are moved to the center. Another practical way is using sponge cylinders or any other stopper of adequate size.
- 14) Once the nectar flow has stopped, remove all the jars (full, half-filled, and empty), saving those that are not filled for the next harvest. If they are left on the hive, the propolis will give them a bad aspect to the consumer's eye.



Figure 4

Discussion

The stamped wax cross may be put higher to save the bees from extra work, but I prefer the job done totally by the bees.

The distance between the jars and the frames wasn't significant; the triplay wood thickness was 9-12 mm to support the jars and stand the humidity and temperature; these can bend downwards, obstructing the bees' movement over the frames.

The bees' access to the jars shouldn't change, because when made wider than 1 ¼ " or 32 mm, they build the comb over it as well, thus the comb does not remain in the jar and it gets fractured when removing it. Even in this size, some holes presented comb growth. Reducing the bee access size to 1 3/16", 1 1/8", or even 1" works as well, but for reasons of ventilation, evaporation and transit agility, the best measure is the

widest possible without producing comb growth. In every country where a special fenotype of bees predominates, the diameter size must be experimented to find the most appropriate diameter for the bee access.

The size and shape of the jar was also important, since the mouth of the jar must have a diameter less than 56 mm or 2 3/16", and with a neck; greater diameters make the bees place the comb on the wooden base, and the same thing happens with jars without neck, completely cylindrical.

On occasion, and on the bigger jars, I've found drone brood. It can be avoided with an excluder, I have placed the jars in the outer spaces.

I manage to place them at the sides of the honey supers if not any jars are evenly built, but every race has a tendency towards certain construction characteristics, with variations in the position of the comb in the jar, the size of the bee spaces and the construction of wet and dry capping.

Carniolan bees construct a more beautiful comb jars, with narrow spaces, resulting in a fuller jar with a dry capping. It makes us admire even more these works of art from our dear bees.

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