

## UPDATE TECHNOLOGY FOR INTENSIVE PRODUCTION OF THE PACKING BEEHIVE OF SERGIO JIMENEZ CATAÑO

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### Abstract

*Technological Up to Date of the Intensive Production of the Packing Hive by Sergio Jimenez Cataño: Thanks to the packing hive in its original form, we came up with a product that has been accepted by consumers in such a manner that, due to its beauty, they do not consume it until they have another packed comb in their hands. This situation has led us to look for ways to optimize the packed comb production in order to fulfill the demand. With the object of achieving an intensive production, we had to overcome certain difficulties that arose in the first version, and in doing so we came to the following self-criticism: The building and container filling pattern is the same as the one used with supers, more in the center and less in the corners and rims. The incoming nectar surpasses the comb building capability. One super with containers provides not enough room for a strong hive in a good flowering season. The manpower need to make up for this situation is high and insufficient. The above mentioned led us to the creation of a mixed production hive, that is, extracted honey and packed comb. In this manner more containers can be evenly filled and all of the nectar collected by bees, retained. We have worked with two alternatives, each one with its variants and advantages and disadvantages. (1) In the container-holder frame honoring the measurements dictated by the principle that allows our bees to work our containers, we used the concept of container-holder frame instead of super, allowing in this manner the transit of the bees to higher supers.. (2) In the simplified handling hive that I named "COFFIN", a horizontal hive of the following dimensions; 123 x 51 x 18.5 cm and a 6 ¼ " frame, we maintained the concept of a container-holder super. In this way we made the job of the bees easier, collected more nectar and we minimized swarming, among various other advantages.*

**Keywords:** Coffin hive / frame holder for jars

### Introduction



Figure 1

The principle and technique of the packing beehive, applied in his original form, using a jumbo beehive, Langstroth, standard and other with honey supers, from the hive body, when commercially obtained product, the honeycomb jar, I have observed on the answer of the consumers, an excellent acceptance at the grade that, at least the first time that they have it in their hands, for the admiration that generates this work of art of the nature, they don't want to consume it until they have a second honeycomb

jar, others want a jar for each one of their dear beings. This situation has forced me to search the form to increase the production of honeycomb jars, to cover the increasing demand.

### **The principle of the packing beehive**

For its intensive production, it has to save some obstacles that presented the first version of the packing beehive, although the principle does not change, it continues to be the access of the bees to the jars, a round perforation of 1 ¼ inches or 32 mm to be the biggest diameter as a low percentage of jars are constructed outside the edge, however with smaller diameter it work too, but to facilitate the most possible to the bees, for his ventilation necessities and the traffic agility I recommend the larger. In a material of 9 to 12 mm, for resisting reasons use triplay wood, but it can be smaller and if we make it bigger, we only caused congestion and more time at the access of bees to the jar, losing agility on the work of the bees. On this perforation, a cross of stamped wax covering this with a total darkness and protection of extreme temperatures, in order to increase the production, the changes are made only on the handling.

### **The problems to solve**

As a form to facilitate the understanding of the reasons for which the handling has evolved I allow me to do the next criticism.

- The transparent plastic jars (for food) but not flexible, can't be at the reach of the consumers, inevitably the squeeze them to see what will happened, and sometimes they don't buy it, and nobody will buy it, because is broken and spilling honey, losing presentation.
- When the jars need to be fixed to the honey supers, it has to be screwing on the caps if they aren't round, it reduces the capacity of jars on each honey super.
- The jars with only one diameter, that can't be bigger than 56 mm or 2 3/16 inches, because if it is bigger, the bees will fix the honeycomb on the base of the jars, that was a limitation for the advantage of many very attractive crystal bottles, combined with the construction of the honeycomb they exaggerate the beauty of both.
- One honey super with jars, provides insufficient space for the work of a strong beehive in a good flowering, the speed in the nectar entrance is bigger than the speed of the construction of the honeycomb to store it, and set to the bees an additional honey super under the jars, significantly diminishes the work of the honeycombs of the jars, wasting the potential production and facilitating conditions to swarm. In order to try to compensate this lack of space, and capacity to store all the nectar that the bees can gather together, retiring very frequently, full frames of the honey super that are under the jars, and full jars interchanging them by empty ones, much manual labor is required and the problem is not solved.

### **The solutions**

The plastic jars (for food) were rejected, and to begin, two models of glass jars were selected, one oval of 460 ml and the other hexagonal of 260 ml. One third model was of 230 ml. Then will begin to work the next flowering.

- Following the system of fixing the jars to the base, screwing them to the caps perforated and fixed previously, although comfortable, not being round bottles, considerably diminished the capacity of the jars for honey supers, reason why the perforated caps were rejected, and instead of using, for the base carry-jars a sheet wood of 9 or 12 mm was used, two sheet wood of 9 mm, one for the access for the bees with round perforations, and on this the other with perforations of the outer diameter of the top of the jar just to fix it to its place, and that way to put it and to take it off without giving turns. With this we gained in additional, speed when putting and taking off jars.
- During some years, the use of jars with the diameter of the top, greater of the specified thing, represented a problem, by the fixation that the bees do to the base, when retiring them, we are forced to break the honeycomb and to spill honey, but this problem became an advantage when finding the appropriate solution (Fig. 3), now these jars have a species of packing with a perforation on the center that makes continuity with the access of bees to the jar, with an inner diameter of 1 ¼ inches and outer diameter of the measurement of the inner diameter of the top of the jar, so that it is in the edge of the jar but within this, and at the same time, gives better presentation to the finished product, the bees instead of fixing their honeycombs to the base-carry jar, fix them to this packing, that retiring the jar, will go away with him, besides working as a seal of guarantee, that it has to be retired off, until it is in the hands of the consumer. If we already understand the "Principle of the Packing Beehive", from down upwards: Access of bees to the jar, on this, a cross of stamped wax and covering to this, a jar; In order to work with jars of any caliber, this "Principle of the Packing Beehive" becomes: Access of bees, on this, the packing perforated with round form, on this, the wax cross, a jar covering the cross and the packing, so that both are within the jar.



Figure 2



Figure 3

- In order to take advantage of all the productive potential of each beehive, given the space sufficient to store all the nectar that can gather, at the same time stimulating the work in the construction within the jars, nullifying the swarming, and diminishing the hand work of the beekeeper, I have arrived to a beehive of mixed production, liquid honey and bottles of honeycomb.

Initially, I worked with two alternatives:

1. - The frame carry-jars, that, respecting the measures and the technique of the Principle of the packing beehive, allow us to transfer the concept honey supers carry-jars, to frame carry-jars with three or four rows of jars, allowing the passage of bees towards superior honeysupers. This first alternative, although can be retaken by those who do not want or cannot change to another model of beehive, was rejected, because it was definitively inferior to second, as far as the facility which the bees have to make his work, to the production capacity, at the smaller facility and manual labor in the handling on the part of the beekeeper,

2. - The best results, than surprised me, because they have been better from what I expected, I obtained with my coffin beehive (by its atypical aspect when seeing one of these), of simplified handling, it maintains the honey supers concept carry-jars, is horizontal, with frame of 6 ¼ inches.

It was proven in his two versions.

First with the Standard measurement of 2 bodies, with outer dimensions of the bucket, of 82 x 50,6 x 18,6 cm., with an inner volume of 66,68 liters, two entrances of 12mm. by 46,2 2 cm. and to cover itself requires 2 inner covers of Standard measurement.

Second, with outer dimensions of the bucket, 123 x 50,6 x 18,6 cm. with an inner volume of 101,91 liters, 2 entrances with a height of 12 mm and 46,2 cm. of length, parallel bars to the frames and are covered with 3 inner covers of Standard measurement.

It was superior, in all aspects to the longest beehive, to the one that requires 3 inner covers of Standard measurement.

If we observed the construction of wild and technified beehives, although they adapt to any form of space, we found four tendencies to be characteristic:

1. - Towards the circular form of the position and the honeycombs.
2. - To the spherical form of the total of the position and honeycombs.
3. - To the construction upwards in vertical spaces.

4. - To the construction to the sides of the young nest and the entrances, when the form of the space does not allow them to do it upwards.

The departure point, for the design of the coffin beehive of simplified handling, are these four tendencies.



Figure 4

If we maintain this beehive imprisoned in an atypical form (flat), we managed to exaggerate the tendency to the construction upwards, and consequently, to magnify work when we placed on this one or two carry-bottles honeysupers.

In the heat of flowering, the nectar entrance is much greater than the capacity of construction of honeycomb in the bottles, for this count on the space equivalent to two honey supers of frames, each one between the brood nest and the corresponding entrances, using frames constructed in this space, all the capacity of wax production and construction of honeycomb is concentrated in the bottles, and the filling of frames for extraction, happens in an agile way than in the beehives of vertical design, with an access of the files of bees immediate to these, only crossing the entrances, and without having to cross by the agglomerating bees that occurs in the brood chamber of the vertical beehives, when mixing, all the activities of the beehive and all the bees with different ages and functions.

On the part of the beekeeper, also with an immediate access to the frames, without interfering in other areas of the beehive, and with the same facility of access to the bottles, for empty bottles and interchange, or retirement of bottles and closing of spaces with corks when the end of the flowering approaches.

### **Discussion**

The development of the packing beehive, has occurred until this moment, in Granja San Juanita, Property of Don Chano and Don Pepe Muñoz, located to a passage of San Luis Potosí, State Capital of the same name, in the municipality of Soledad de Graciano Sanchez, in the center-north of the Mexico, with a dry tempering climate. I consider this technique can be practiced anywhere of the world, only adapting it to the climatic characteristics and particular phenotypes of bees in each place. Only need to be totally conscious, if we did not take the appropriate measures, they are more vulnerable to the extreme temperatures, his greater surface of exhibition to solar rays when they fall on the beehive in a perpendicular form, as well as the amount of snow or ice that can accumulate in their ceiling, in the proximity to the brood nest, force us to use insulating systems and materials.

In places where a beekeeping with different bees from the popular practices, productive and spread carniolas and italians, it will be advisable first to study the answer to different measures from Principle of the Packing Beehive.

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