



UNIVERSIDAD DE SANCTI SPÍRITUS  
"José Martí Pérez"  
(UNISS)  
Facultad de Ciencias Agropecuarias

## Preliminary report on the use of Viusid vet liquid in the stimulative feeding of bee colonies

Vicente Méndez García\*, Manolo Paz Hernández\*\*, Julio Piñero G.\*\*\* and Franklyn Rodríguez Crespo\*\*\*\*

- \* Veterinarian, Universidad de Sancti Spiritus José Martí Pérez
- \*\* Veterinarian and beekeeper
- \*\*\* Agricultural engineer and beekeeper
- \*\*\*\* Veterinarian, State Veterinary Service

### BACKGROUND

It is not common practice in Cuba to administer nutritional supplements to bee colonies. Only when there is a shortage of forage is an artificial feed used to stimulate the worker bees to increase the production of royal jelly, which feeds the larvae and the queen bee.

Sugar syrup feed is not the same as honey, because it does not contain the mineral salts, proteins or pollen that are essential for the development of the brood. In view of these deficiencies, the bees that are reared with syrup have a much shorter life span than those reared with honey.

This stimulative feeding can be enhanced with protein substances, such as soy flour, skimmed milk powder and powdered egg white, especially if there is a shortage of pollen. But these products are expensive and the bees do not take to them very well (Pérez, 2007).

Viusid vet has been used as a food supplement for many species, with excellent results. Its components: antioxidants, vitamins, trace elements and glycyrrhizinic acid (which is extracted from liquorice root) are natural and can provide bees with the necessary elements which are not found in other food sources available for the bees during this stage. In this way, it helps strengthen the bee colony, which then produces more honey.

The objective of this clinical trial is to evaluate the effect of Viusid vet on bee colonies during the dearth period, when it is used as a food supplement that is added to syrup used in the artificial feed.

## **MATERIALS AND METHODS**

### **Location**

The clinical trial was carried out in a private apiary located in a rural area of Guayos, in the municipality of Cabaiguán, about 15 km from the city of Sancti Spiritus. There are 22 beehives in total that are arranged in rows, they stand 30 cm from the ground and there is 1 m of space between them all. The apiary is located on high ground. There are trees at the back of the apiary that provide protection against the elements and shade from the direct sunlight shining down on the beehives. This is a permanent location, even during the dearth period.

### **Health**

The category does not have any infectious diseases; regular health inspections are carried out by the State Veterinary Service. No antibiotic treatment of any kind is used. Twice a month, zootechnical work was carried out on the bee colonies, including the upkeep of the whole outside area.

### **Bees**

Cuban honey bees were used; this species is a hybrid produced from the black bee (*Apis mellifica mellifica*), the first species that came to the country, and the Italian yellow bee (*Apis mellifica ligustica*), imported from the United States by beekeepers at the beginning of the 20th century. It is winter-hardy bee; it's rather irritable, but very industrious and strong, one that has adapted well to our weather conditions.

### **Bee forage surrounding the apiary in the different months of the year:**

Wild plants are the main source of bee forage in the area. More than 40% of the honey comes from three bejuco climbing plants that bloom in the last three months of the year. Production starts to rise in September and then peaks in December.

1– Liane savon (*Gouania polygama*): September-October

2– Morning glory (*Ipomoea triloba*): October-November

3– Christmas vine (*Turbina corymbosa*): November-December

4– Mexican lilac (*Gliricidia sepium*): January-March

5– Cuban Royal Palm (*Roystonea regia*): All year round (sustenance of the bee colony and it guarantees pollen).

## Climate

The clinical trial was carried out in July, which is one of the months when there is drastic shortage of bee forage. The weather at this time of the year can be described as being hot, humid, sometimes rainy, sunny and quite windy.

The average temperature recorded at the nearest weather station for that month was 34 °C with a relative humidity of 77%.

## Experimental design

9 beehives were included in the clinical trial. They were all of a similar physical strength, with three supers and bottom boards, and they were selected after a honey harvest.

They are comb honey production beehives, with a brood chamber and two supers; there is enough room for 10 brood chamber frames, 9 in the second hive body and 8 in the third.

At this stage, the bee colonies are fed with molasses (invert sugar, an equal mix of glucose and fructose, with approximately 17% water), mixed in equal proportions with water.

Two litre plastic bottles were used as feeders and they were fitted on the top part of the beehive inside; two tiny holes were made in the front part with a fine needle.

Viusid vet liquid was added to each litre of this syrup.

Group 1: 3 bee colonies with 1.5 ml of Viusid

Group 2: 3 bee colonies with 1 ml of Viusid

Group 3: 3 bee colonies without any treatment

The treatment was only administered for 16 days, because from then onwards the forage in the surrounding areas started to grow and the bees consumed very little of it.

<b>COMPOSITION OF VIUSID® vet LIQUID</b>			
Malic acid	9.2 g	Pyridoxine	0.45 g
Glucosamine	9.2 g	Zinc sulphate	0.23 g
Arginine	8.3 g	Calcium pantothenate	0.23 g
Glycine	4.7 g	Folic acid	0.1 g
Ascorbic acid (Vit. C)	2.3 g	Cyanocobalamin (Vit. B12)	0.01 g
Monoammonium glycyrrhizinate	0.46 g		

## Aspects to be monitored

- 1- Number of honeycombs with the compact mass of brood cells all over the surface. Checked and evaluated visually.
- 2- Honey production per beehive and per treatment group (kg).
- 3- Existence of diseases (by means of a physical examination and laboratory tests for confirmation).
- 4- Undesirable signs and symptoms in the bee colony (dead larva; broods or adults bees; weakness in the colony, etc).
- 5- Bees' acceptance of the product that is mixed with the syrup in the different groups.
- 6- Economic impact.

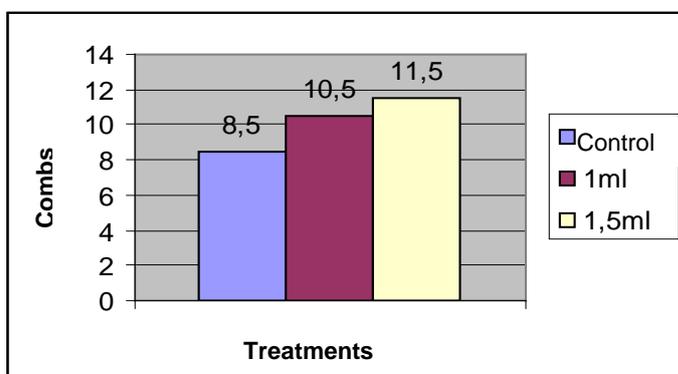
## RESULTS

As shown in the graph, the group given the dose of 1.5 ml of the product had a better performance compared to the control group (difference of 3 points). The bee colonies that were given 1 ml dose of the product had a difference of 2 points more than those from the control group.

None of the colonies were infected by any diseases and no undesirable effects were observed among those that received the treatment.

The colonies that were not treated with Viusid consumed the syrup for 7 to 10 days, in a similar way as those that were also given the product.

**Graph 1. Average number of full brood combs in the different experimental groups**



## **PRELIMINARY CONSIDERATIONS**

1- Viucid vet was usually accepted by the bees when it was mixed with the syrup.

2- No undesirable effects were observed in the bee colonies.

3- A positive response was observed in the bee colonies that were given the treatment, especially in those that were given a dose of 1.5 ml. This was corroborated by the higher number of honeycombs with larvae.

The results of this clinical trial are still not conclusive; the honey crop from the bee colonies included in the clinical trial has to be evaluated. This is expected to be carried out at the end of October. In the future, it would be a good idea to start the treatment when the artificial feeding stage begins.

## **ANNEXES**



**Photo 1: Apiary used in the clinical trial  
Beside Manolo Paz (on the right)**

## **Consulted bibliography**