

## **CUBAN BEEKEEPING DEVELOPMENT PROGRAM ADVANCES IN THE LAST TWO YEARS.**

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### **ABSTRACT**

Cuban beekeeping is one of the most elder of the Americas. Bees are in the island from 250 years. Is an official ban for bee's imports for more than 50 years then bee's population are well adapted to island natural conditions.

The Cuba Government has decided to put in the way a Beekeeping Development Program with the aim to reach the island honey estimated potential of 10 200 t of honey in 2020.

With this purpose it was started a wide recapitalization and investments process in the sector, introducing advanced new technology according to the climate and the international good beekeeping practices.

In the same way it was increased honey price to beekeepers, credits to cooperatives and individual producers to facilitate infrastructures modernization.

It was imported and national produced equipment for honey extraction and industrial hones processing and it was reequipped labs for honey and bee products quality control.

The program foresees also a national bee's selection project and honey flora improvement looking climate changes and the high frequency of extreme meteorological events which frequently affect Cuba.

**Key words:** Cuba, beekeeping, Development Program.

## **AVANCES EN LOS DOS ULTIMOS AÑOS EN EL PROGRAMA DE DESARROLLO DE LA APICULTURA EN CUBA.**

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### **RESUMEN**

La apicultura cubana es una de las más antiguas de América, las abejas melíferas están en la isla desde hace unos 250 años. Oficialmente no se hacen importaciones de

abejas desde hace unos 50 años por lo que la población de abejas está bien adaptada a las condiciones naturales.

El gobierno cubano ha decidido implementar un Programa de Desarrollo para la apicultura con el propósito de alcanzar la producción potencial estimada del país de unas 10 200 t de miel para el año 2020. Con ese propósito se ha iniciado un proceso de recapitalización e inversiones en el sector introduciendo tecnología de avanzada adecuada a las condiciones propias del clima y las prácticas apícolas internacionalmente aceptadas. También se han iniciado acciones en beneficio de los apicultores, aumentando el precio de compra de la miel, el otorgamiento de créditos y facilidades para la modernización de las infraestructuras. Se ha adquirido equipamiento y nuevas tecnologías para la extracción y procesamiento industrial de la miel y se ha modernizado la infraestructura de laboratorios y centros encargados del control de la Calidad. El Programa prevé también la mejora de las abejas y el fomento de la flora melífera dentro de un marco de sostenibilidad teniendo en cuenta los efectos del cambio climático y los fenómenos meteorológicos complejos que afectan regularmente la isla.

Palabras clave: Apicultura, Cuba, Programa de desarrollo

## **Introduction:**

Beekeeping in Cuba started on 1764 after bee's introduction in the main island as results of the end of British Havana attack year before.

Bees gives the country the possibility to became a century after into a wax exporter selling by the middle of XIX century more than 2000 t a year; after covering national consumption.

Bees visited more than 300 different plant species of national flora, but some 75 contributed to national honey production and 20 of them are the main Cuban honey plants. The more important honey plants are *Turbina corymbosa*, *Ipomoea triloba*, *Gouannia polygama*, *Gliricidia sepium*, *Vighiera helianthoides*, *Bucera buceras* and *Lysiloma latisiliqua*.

Forests by the sea and those of low mountain areas are the most productive for beekeeping.

Cuban honey is high quality product, more than 95% is provided by wild plants that bloom along the year. This climate and flora characteristics allows the possibility to select a wide range of honey, pollen and propolis different types to provide to an specific market and costumers.

Traditionally the market for Cuban honey is Europe. That's the reason because starting on 1997 after the Council Directive 96/23, it was necessary to reorganize and upgrade all honey production system by applying the new requests for honey production and direct food consumption products processing.

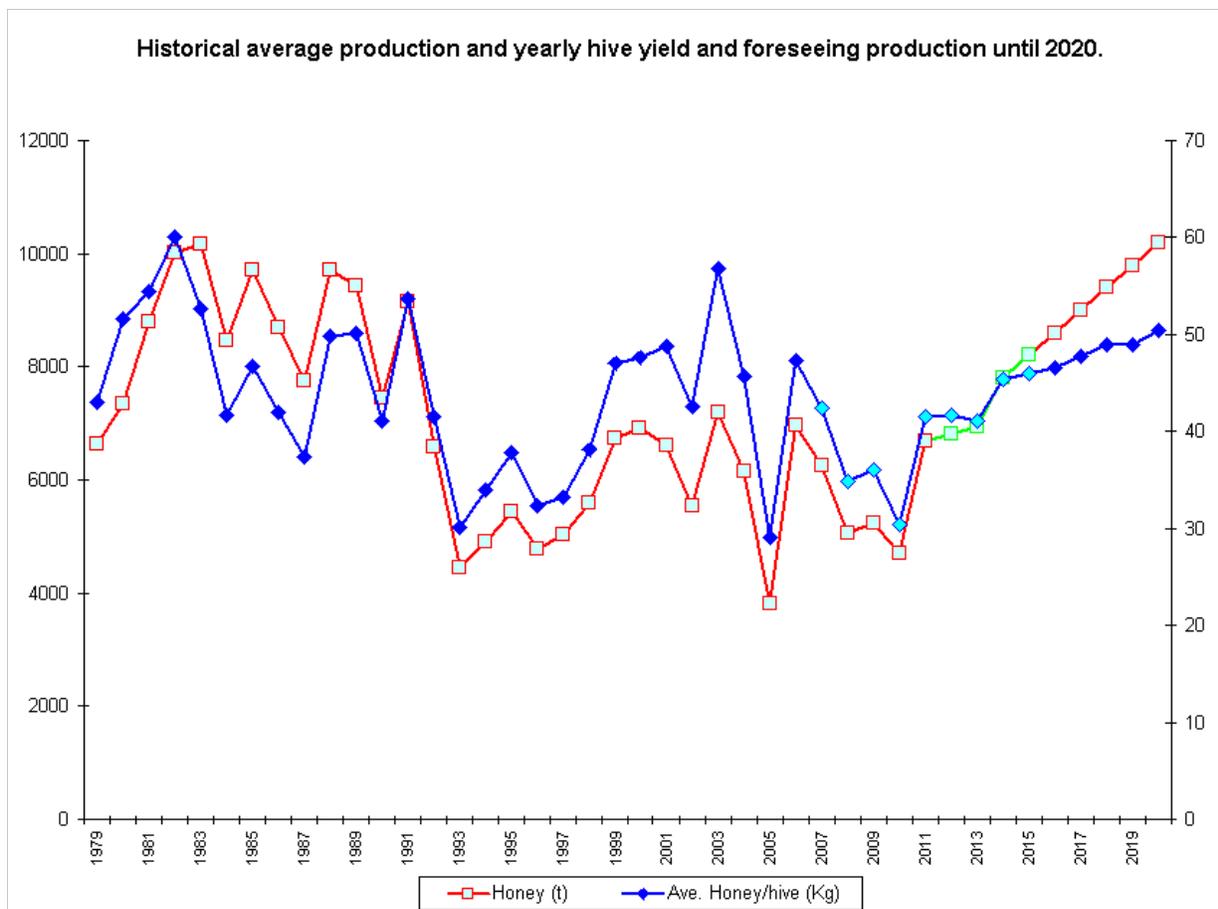
## **Present situation and recent achievements.**

There are 1410 honey producers and to the honey production chain are related 2269 people.

A limiting factor for honey production grows is hive number, there is actually 163 500 hives which gives an average density of 1.48 hives/Km<sup>2</sup>, lower than this of the record production year that was of 1.72 hives/Km<sup>2</sup>. In the last two years national hives number grows on 9000 hives, this factor combined with the increased honey price to producers, became two important key stones to increase honey production on 2120 t.

National average honey production in the last 5 years is 5800 t with an average honey yield of 37.8 kg/hive.

Cuban beekeeping developing program has proposed to increase hives number until 200 000 hives in 2019.



**Production diversification:**

Actually Cuba has a monofloral honey production potential of more than 2 000 t. Monofloral honey is other way to diversify hive production and to increase its value.

Cuba has a certificate potential of organic honey production of 680 t on areas of Holguín, Granma, Santiago de Cuba and Guantánamo provinces.

It was also restarted pollen, propolis and bee venom production with the aim to elaborate about 10 new nutritional supplements for the market.

**Advance in the achievement of Development objectives 2005 - 2020.**

**Production**

1. Honey production grows up on more than 2000 t
2. Hive stock grows 9000 more families in the last two years
3. Yearly average honey yield has grown 11 kg/hive
4. Was an implemented bee selection program based on hygienic bees and integrated pest management without chemical application on hives.

5. It was restarted other productions from hive: pollen, propolis and royal jelly to develop new products.

### ***Economical***

4. Honey production cost was reduced.
5. It was grown up added value because of hive production diversification.

### ***Quality***

6. It has being implemented Good Beekeeping Practices on honey production chain, based on investments valued over 5 million USD, mainly on improving beekeepers infrastructure and Honey Processing Plants.
7. Was certificated Quality Management System on Honey Processing Plants and implemented HACCP along the process.
8. Was accredited analytical methods in the Quality Control Labs after ISO 17025 standards.
9. Was invested more than a million USD to provide reliability and capacity on analytical capacity of Quality Control labs to certify presence or not of forbidden substances residues in honey.

### ***Social***

10. Honey buying price rising to beekeeper has a huge impact on beekeepers life level and helped to improve young people and women incorporation to beekeeping.

### ***Environment***

11. Agriculture Ministry supported ecological agriculture, based on biological controls, biofertilizers and bioproducts that allow developing an environmental culture on farmers that benefits beekeeping.
12. It is supported also pollination services for entomophylous cultures.

### ***Technological***

13. In the last two years was achieved the main modernization of beekeepers and industrial productive infrastructure, it was built up or renewed more than 50 facilities for honey extraction and started the program to renew honey processing plants according to the Developing Program.

### ***Organizational***

14. Starting on 2009 it was reorganized Beekeeping National Enterprise.
15. Between end of 2013 and beginning 2014 should be implemented Cuban Beekeeping Geographical Information System (SIGA) allowing to follow up treazability of national honey production chain.

### ***Policies***

Accomplishing Program Objectives is supported by a strategy defining actions on all dimensions. Policies to be implemented are based on:

- Honey Flora protection and improvement Program.

- Bees Selection Program.
- To strength integrated pest management program face Varroa and other bee's diseases.
- To improve and modernize beekeepers productive infrastructure, and honey processing and packing plants
- Products offer and markets diversification.
- Beekeeping areas inventory and production control by the Digital Geographical Information System.
- Motivation, upgrading and equitable economical relations with Beekeepers.
- To put in the way Technical and Scientific Innovation projects, Beekeepers Education projects and Beekeeping Extension Projects.
- Consumer's education about bee products consumption advantages.

### **Fundamental *transversals* Subprograms:**

1. Equitable payment system and public acknowledgement to producers.
2. Quality
3. Science and innovation
4. Beekeeping Extension System
5. General producers Education program
6. Scientific and technical services

### **Impacts:**

#### **Social**

Beekeeping Development Program actions such production growth and quality improvement in the last two years, generates a general benefit impact to population. Improving Achieving Necessary Skills, education and new investments have positive impacts on professional producer's results and beekeeping products quality.

#### **Economical:**

Producers increasing production levels and income has supported beekeeping self financial support for developing investments with an important impact on population food safety.

#### **Environmental:**

Production field and processing technologies improvement has reduced residues and waste, risk of contaminant substances, to protect and foment honey flora with a positive impact on environmental conditions.

#### **Technological:**

It has being operated a general improvement of technical producer's level as results of education and new technologies investment with a positive impact on productivity and beekeeping culture upgrading

## **Conclusions**

1. Producer's education and extension programs combined with equitable payment to producers have permitted to better exploit honey potential and diversify hive production.
2. Program policies and objectives have being implemented by financial and organizational decisions.
3. Extension, education and technological upgrading are key elements on successful achievement of Program main policies to apply Good Beekeeping Practices as bases of a new beekeeping culture to optimize productivity, efficiency and quality on beekeeping production chain.

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