

Residues control in Cuban honey.

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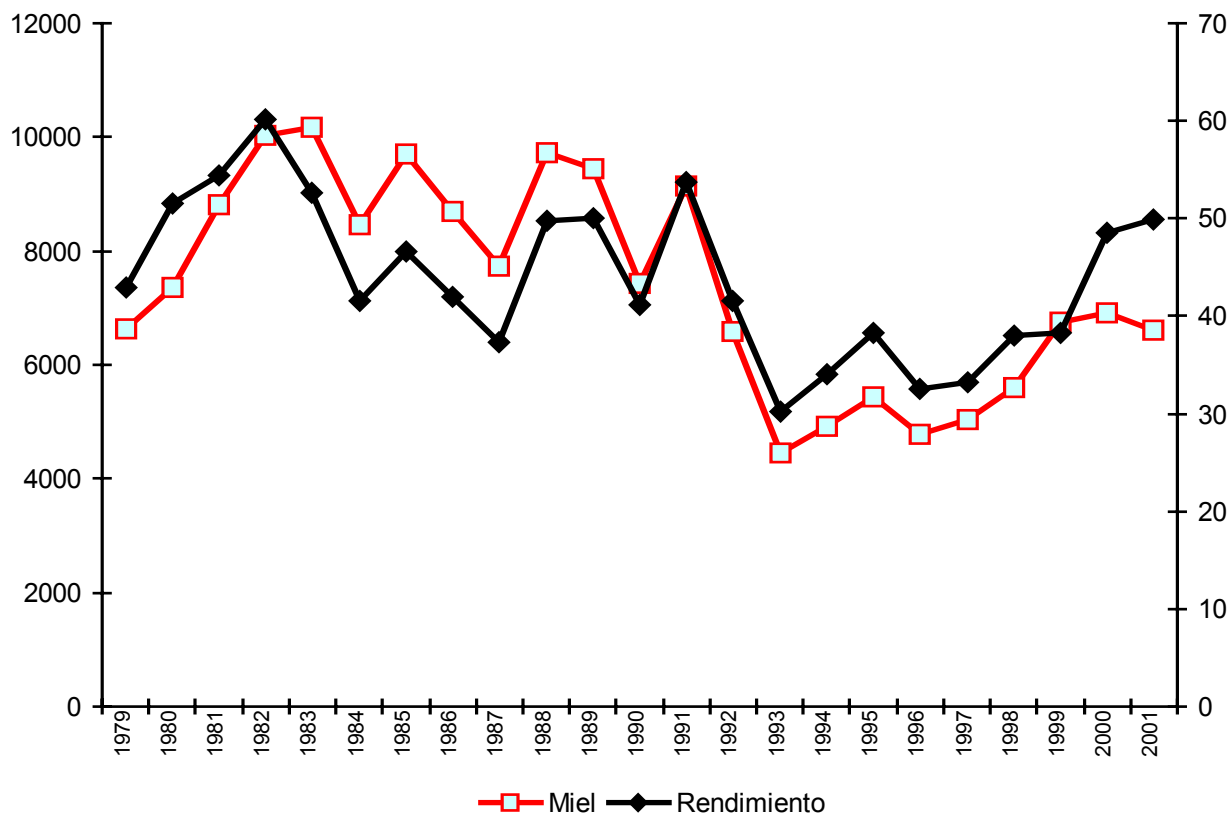
Cuban honey is exported to EC countries and after council directive 96/23/EC, of 29 April 1996, third countries must present every year its Watch Plan for residue elimination from its products and a rapport about residue findings. It is a condition to be included in the third countries authorized for imports into EC.

In Cuba honey production is made along the whole country. It is an intensive and extensive exploitation, in which dominates migratory beekeeping with Langstroth hives.

Beekeeper cooperatives, big private beekeepers and small individual beekeepers provide more than 95 % of the total volume of honey production.

In Cuba there are 1720 beekeepers, which produces more than 95 % of total honey from wild plants. The highest harvest occurs from September to February.

HISTORIC OF CUBAN HONEY PRODUCTION AND YEARLY HONEY HIVE YIELD.



In 1990 it was started honey flora, apiaries and communication ways mapping inventory. Mapping together with beekeeping reordering in all Cuban provinces allows knowing territorial hive distribution and diseases distribution and control.

In 1999 was organized individual beekeepers, honey production and owning hive inventory register in every province. Its allows to control honey production origin, producer yearly average yield and quality.

Hive and beekeepers register programs and its integration, avoid uncontrolled beekeeping the main source low honey quality production and bee diseases spread.

From 1998 is working in Cuba for residues control in honey. For that purpose it was organized a work system based on Veterinary Medicine Institute, Bekeeping Direction in Agriculture Ministry supported by a group of 17 laws, decrees and Administrative regulations:

- Law 41 of Public Health, of 13 July 1983.
- Law 81. Law of Environment, of 11 July 1997.
- Decree Law 137 for Veterinary Medicine, of 19 April 1993.
- Decree 176. Apiculture Protection, Melliferous Flora and its Contraventions, of 22 October 1992.

Chemicals used to fight bee diseases in Cuba are:

Antibacterial:	All antibiotics are forbidden (oxitetraciline or any other)
Antivarroa products:	Flumetrine, Mixtures of tymol, menthol, camphor and eucaliptol.
Disinfectants:	Iodine Sodium hydroxide Formol

Institutions and services, which fight against illegal fraudulent use of drugs in beekeeping, are:

- Public Health Ministry.
- Veterinary Medicine Institute.
- Plant protection Service.
- Ministry of Agriculture Quality Control Office.
- Apiculture Direction of Agriculture Ministry.

Beekeeping Research Station

National Reference Labs are:

- Plant Protection Institute (ISV) of Agriculture Ministry .
- Food Hygiene and Nutrition Institute (INHA) of Public Health Ministry.
- National Center for Food Hygiene (CNHA) of Agriculture Ministry.

All beekeeping related institutions take a group of provisions in order to avoid presence of antibiotics in honey, to have a safe production which accomplish market demands.

In processing plant honey lots are sampled by State Veterinarian Service and the Quality Control officials.

To be admitted for processing, every lot must have Sanitary Origin Certificate and a card with the following data:

- Province origin
- Producer
- Municipality
- Buyer
- Quality degree
- Class
- Net weight
- Main Honey plant
- Date

Second sampling level is after honey is processed and packed in all its formats for the market.

After the Watch Plan every 60 t will be taken a sample of honey in these two points related before.

Samples to be taken in each Honey Processing Plant are distributed as follows according to the total volume of honey production reached the year before:

Oriental Provinces	30 % of samples	Oriental Processing Plant
Central Provinces	30 % of samples	Central Processing Plant
Occidental Provinces	40% of samples	Central Processing Plant

Beekeepers with 5 apiaries all hives will be inspected. Beekeepers with more than 5 apiaries are inspected 10 % of total apiaries.

Inspections search mainly:

- Record of diseases and diagnostic of diseases.
- Treatment records existence and who applies that, date and kind of each treatment.
- Inventory of drugs and the correspondence between amounts bought and consumption.
- Data of honey produced during treatment, extraction and is final destination.
- Records of rapports to Veterinarian Watch Services about bees or larvae mortality and laboratory samples sent.

For Quality Control It was installed a HPLC lab for antibiotics with equipment for post column derivatization and fluorescence detection, a CG lab for pesticides both to reach analytical own capacity to certificate residues presence in Cuban honey.

It was developed and validated an original analytical method for tetracycline's detection by HPLC.

It was organized a strict quality control for all honey lots to be exported. All lots are certificate by the quality control services in the Estación Experimental Apícola and by Honey Lab of Bremen (QSI) in Germany in a way to have a safe and continuous Quality Control certification of Cuban honey.

It was informed all beekeepers and more than 600 of them assist to conferences and receipt booklets and information about handling bees with out antibiotics and risks of honey contamination with prohibited substances.

It was started a genetic project to select resistant bees to reduce or eliminate drugs in beekeeping practice. Results was evident during 2002 it was no importation of chemicals against Varroa, when treatment was necessary it was used only organic products.

RESIDUE FINDINGS IN HONEY SAMPLES.

	1999			2000			2001		
	N	n	%	N	n	%	N	n	%
Streptomisine	111	0	0	67	0	0	96	17	18
Tetraciline	111	26	23.4	67	2	3.5	96	22	23
Sulfonamides	111	1	0.9	67	0	0	96	4	4
Fosforated	111	0	0	67	0	0	70	1	1.4
Clorinated	111	0	0	67	0	0	70	12	17.1
Flumetrine	111	0	0	67	0	0	75	0	0
Cadmium	111	0	0	67	0	0	67	0	0
Plumb	111	0	0	67	0	0	67	0	0

N= Total samples tested.

n = Total positive samples.

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