

CHARTER OF MEDITERRANEAN HONEYS

The harvest of honey is one of the oldest human activities in the Mediterranean area. As showed also in the famous prehistoric cave painting of the Cave of the Spider in Spain near Bicorp in the Region of Valencia, dated according to different sources to 8000 years B.C.



Cave painting of the Cave of the Spider (Valencia – Spain)

The countries of the Mediterranean basin are an area of excellence for beekeeping; in this area the exploitation of domestic bees for beekeeping has been practiced since the ancient times. This activity was also common during the High-Egyptian Empire in the XXIV century B.C. and in the ancient Greek (Apiculture Treatise of Aristotle).

The honeys produced in certain Mediterranean countries are filled with sun, and they have nectars that don't exist at all - or rare to find - in other places: Orange, Eucalyptus, Lemon, Tangerine ... Moreover, it is also possible to find certain honeys with exceptional properties coming from some protected areas, such as garrigue honey, or chestnut honey or jujube honey.

The beekeeper, collecting the honey, does not modify anything of its original composition, and he or she needs to make an effort to preserve the integrity of the product. All of that supposes the knowledge, the control and the command of a certain number of factors both before (the harvest) and after (during the preparation and the packaging of the product).

1ST SECTION

GENERAL CHARACTERISTICS OF HONEYS

Honey consists of different sugars, but essentially of fructose and glucose.

However, other substances are part of the honey natural composition: some organic acid, some enzymes and some solid parts that origin from the honey collection. The color of honey can vary from almost colorless to dark brown. It can have a fluid consistency, thick or crystalized, in part or totally.

The taste and the smell vary, but they depend from the vegetable origin. Similarly, the vegetable origin determines some important differences of certain characteristics in different honeys.

DEFINITION

Honey is a natural product. The bees of the species *Apis mellifera* elaborate it starting from the nectar of the plants, the secretions that they extract from the different plants of the spontaneous flora or from plantations, or from the secretions coming from the alive parts of the plants, or from the excretions left on the plants from sucking insects.

The bees collect, modify, transform and enrich with some specific substances of their own, depose, dehydrate, stock and let to become ripe in the cells of the hive the initial substances, which become then honey, a food with very rich and complex dietary characteristics.

VARIETIES

The main varieties of honey are (divided by the origin):

- flowers honey or nectar honey (starting from the nectar of the flowers)

- honeydew honey (starting essentially from the excretions left by sucking insects (Hemiptera insects) in the alive parts of the plants or starting from the secretions coming from the alive parts of the plants).

COMPOSITION

The honey destined to the human consumption needs to comply with the following characteristics of its composition:

1. Content of sugars:

1.1 content of fructose and of glucose (total of the two):

- flowers honey not less than 60%
- honeydew honey, combination of honeydew honey with some flowers honey not less than 45%

1.2. content of saccharose:

- in general no more of 5 g%
- false acacia (*Robinia pseudoacacia*), lucerne (*Medicago sativa*), sweetvetch (*Hedysarum*), red eucalyptus (*Eucalyptus camaldulensis*), citrus (Lemon spp). No more than 10%
- lavender (*Lavandula* spp.), borage (*Borago officinalis*) no more than 15%

2. content of water:

- in general no more than 18%
- Calluna honey no more than 20%

3. content of insoluble substances in the water:

- in general no more than 0,1%
- condensed honey no more than 0,5%

4. electric conductivity:

- honey not listed down here and combination of these honeys no more than 0,8 mS/cm

- honeydew honey and chestnut honey and combination of these honeys, with the exception of combination with the honeys listed down here no less than 0,8 mS/cm
- exceptions: strawberry tree (*Arbutus unedo*), ash heather (*Erica*), eucalyptus, lime tree (*Tilia* spp.), simply heather (*Calluna vulgaris*)

5. free acid:

- in general no more than 50 milli-equivalents of acid for kg

6. diastatic index and content of Hydroxymethylfurfural (HMF), determined after the treatment and the combination:

a) diastatic index (Schade scale):

- in general, no less than 8
- having honeys a low natural content of enzymes (for example, citrus honey) and a content in HMF not superior to 15 mg/kg, no less than 3

b) HMF:

- in general, no more than 40 mg/kg (considering the reserve of the dispositions seen at point 2 second dash)

Pollen

No pollen or constituent particular to honey may be removed.

PURITY

When the honey is destined to the commercialization and to human consumption, it must not contain any added food product, included any added food additive, and any other addiction different from honey.

The honey, as much as possible, must be free from organic and inorganic substances extraneous to its composition. It must not have a strange taste or smell, it must not have started the fermentation, it must not present a level of acidity artificially modified, it must not be heated in a way that its enzymes are killed or made considerable inactive.

2ND SECTION

There are many monofloral and multifloral honeys that come from areas more or less extended, contiguous or superimposable, and that can distinctively represent the Mediterranean area; these honeys are characterized by our geo-botanical area and their

description is the result of in-depth studies realized in the research institutes of the various countries of the Mediterranean basin.

The beekeeping culture and tradition of the Mediterranean basin indicates as main honeys:

- Monofloral : Acacia, Citrus, Tangerine, Chestnut, Eucalyptus, Jujube, Carob, Euphorbia, Sulla, Thyme, Honeydew.

- Polyfloral: Garrigue.

The work of characterization is very long, complex and multiform. For these reasons in this document three honeys are described, only as an example, for their popularity and universal recognizability; the characteristics organoleptic and melissopalynological of these three honeys are widely shared also at a scientific level.

The direction and the in-depth analysis of the characterization studies, the comparison and the possible sharing of the technical data sheets produced from the various Mediterranean research institutes could contribute in a fast and effective way to implement thoroughly and rapidly the “Charter of the Mediterranean honeys”.

SPECIFIC CHARACTERISTICS OF THE MAIN MEDITERRANENA HONEYS

ORGANOLECTIC CHARACTERISTICS

Type of honey	Physical condition	Color	Intensity	Description of the smell	Taste
Citrus honey (spp)	Rapid crystallization	Very clear and gold	Average	Delicate, strong, pleasant	Average sweetness
Eucalyptus honey	Pretty fine crystallization	Average darkness	Average	Aromatic	Average sweetness, weak acidity
Thyme honey (spp)	Retarded crystallization	Dark	Average or strong	Aromatic	Distinct

MELISSOPALYNOLOGICAL CHARACTERISTICS

Citrus honey (spp.)

Citrus pollen: very variable percentage, the most of the time superior to 5%, with the exclusion of the species not nectariferous and hyper-represented.

Number of grains of pollen in 10 g of honey (PK/10g): less of 20.000.

Eucalyptus honey

Eucalyptus honey: in general superior to 90%.

Number of grains of pollen in 10 g of honey (PK/10g): superior to 100.000.

Thyme honey (spp)

Thyme pollen: very variable percentage, at least superior to 15%, with the exclusion of the pollen of species not nectariferous and hyper-represented.

Number of grains of pollen in 10 g of honey (PK/10g): in general inferior to 20.000; it can be possible to wait 50.000 if the pollens of plants hyper-represented (for instance eucalyptus) are present.