

## RECHERCHES ABOUT THE QUALITY HONEY DEPENDENT ON SAME FACTORS AND PROCESSING METHOD

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### Abstract

*In this study was follow the way that some factors influence honey composition and quality. The quality of honey is affected by many different factors, from the time it is removed from the honey bee colony until it is sold for human consumption.*

*Whether the operation is small or large, it is important to produce a final packaged product that is of highest quality and attractive to the consumer.*

*In this sense it has been determined the main physical-chemical indicators of three honey assortments and it has been pointed out the way that are influenced by honey assortments, processing and storage conditions, keeping duration.*

Keyword: honey composition, quality

### INTRODUCTION

Honey is known as an alimentary food of higher nutritive value. Honey quality is affected by different factors from the time it is removed from the honey be colony until it is sold for human consumption.[4, 5]

The proper handling during the harvesting and processing can bad to obtaining a product with insignificant losts of honey quality. [7]

While the consumers prefer fresh or unprocessed honey – liquid honey that has not been filtered or heated, most market outlets require honey with a long shelf life. The limitation of heating and filtrating are necessary for stopping crystallization and fermentation. [1, 3] The crystallized honey transformation into liquid honey is made introducing the pot with honey in another pot with water at temperature of 40 degree C. Honey overheating produce furfural.[2]

The final product should be low in moisture, free from foreign flavors and impurities.

Honey quality is affected most by heating and moisture content. During processing honey should not be overheated. Excess heat chemically darkens the honey and

eliminates volatile flavors that make honey unique. Honey is hygroscopic: it readily absorbs moisture from moist air and loses it to dry air. Moisture even passes through the wax cappings, so that the degree of ripeness at the time it is removed from the colony is largely related to the prevailing atmospheric humidity. Absorption of moisture lowers the grade and keeping quality of the honey. High-moisture honey may ferment. Honey supers removed from colonies should be stored in warm, dry areas.

Honey composition is different and depends by many factors as: its origin, processing methods, storage condition and the time from harvesting until it is sold for human consumptions.

### MATERIALS AND METHODS

The analysis were made on robinia honey, sun-flower honey and polyflora honey.

Moisture determination was made using drying closet method.

Acidity determination was done with sodium hydroxide N/10 in presence of phenolphthalein as indicator. The cm<sup>3</sup> number of sodium hydroxide solution used for titration represents the product acidity.

The saccharose was determined using Elser method-determination of reducing direct sugar before and after invertition and we find the saccharose though substraction.

For inverted sugar determination was use Elser method.

## RESULTS AND DISCUSSIONS

After these analysis was obtain the results mentioned in table 1. It can be observed that robinia honey has the lowest water content 17,2% and polyflora honey has the highest water content 18,6%.

Harvested honey moisture has to be under 20% and can reach 23%. Honey with high water content may produce fermentation processes .The best time remove excess moisture from honey is while it is still in the comb. Honey harvesting from not unsealed honey combs and when it happens a fast revaluation because honey is liable to alteration.

Concerning saccharose was find that robinia honey has the lowest content 4,2% while polyflora honey has be highest content 7,7% and sun-flower honey 5,4%. Because of lower saccharose content and lower weight of glucose, highest percent of fructose 41,73%, robinia honey has slowest crystalization.

Depending on fructose percent, this honey may become sugared even after many years.

The nutritive value of crystallized honey is the same with that of liquid honey ,

was can say that presents a guarantee that this honey is natural, without substitutes or adulterates , because a false honey doesn't crystallize.

Sun-flower honey has a high glucose and saccharose content that's why this honey crystallizes faster than the other honey sorts, sometimes it crystallizes in honey combs and it's extraction has to be made fast.

Polyflora honey crystallizes after 10 days from extraction that's because high content of saccharose.

The diastase value evident that robinia honey has superior value to minimum limit (10,9) stipulated in Minister of Health Order no. 195/1998. The other two assortments enregister lower values: 9,2 and 8,5. (table 2)

Diastasic index values lower than 10,9 enregister when honey suffers a brutal heating treatment and when honey results from bees fed with sugar. When is adulterate with sugar or inverted sugar, diastasic index is zero.

All the three samples have a higher sugar content but in this case isn't about an adulteration of honey with sugar it's about a heating ou 40 degrees C for honey liquefaction.

Concerning the acidity from the three honey assortments only robin honey had a value under maximum limit stipulated in Minister of Health Order no. 195/1998. These high values of acidity may be the cause of an old honey, for a honey extracted from a long time the acidity is higher.

The studied assortments have a year from extraction that explains the high values of their acidity.

Table 1

The compositions of different sortments of honey

Assortments of honey	Moisture (%)	Acidity (cm <sup>3</sup> de sol. NaOH N/10 la 100g)	Saccharose (%)
Robinia honey	17,2	3,8	4,2
Sun-flower honey	17,8	4,4	5,4
Polyflora honey	18,6	5,2	7,7

Table 2

## The content of inverted sugar and diastasic index

Assortments of honey	Diastasic index	Inverted sugar %
Robinia honey	11,9	75,6
Sun-flower honey	9,2	73,8
Polyflora honey	8,5	71,4

**CONCLUSIONS**

- Saccharose weight influence crystallization process of honey.
- Robinia honey after 1 year from extraction has the lowest water content (17,2%);
- Honey acidity is higher in the case when it harvested in the past years therefore the acidity increase during storage;
- Analyzed honey samples weren't adulterate with sugar in this way inverted sugar values reached 70% in all the three cases;
- Polyclonal honey and sun-flower honey were submissive to an intense treatment probably for their transformation into liquid state because both of these assortments crystallize easily. That shows diastasic index values are under 10,9-the minimum admissible value[6];
- Robinia honey crystallizes after some years because of a higher fructosis content but not all of it that's why it isn't submissive to a termic treatment.

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