

HONEYBEES-FOOD AND INGREDIENT IN DISHES

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Abstract: Honeybees are known as a valuable food due to its dietary and nutritional properties. Honeybees are distinguished from industrial sugar through the content rich in vitamins, enzymes, amino acids, mineral salts, organic acids, which have a positive effect on the process of regulating some functions of great importance of the body. Honey, having many beneficial properties, is a very important food that should not be excluded from people's diet. Since ancient times, this product has been used in medicine, classic cures but also cooking. The oldest recipes that include honey dates back hundreds of years. The present work presents a study on the presence of honey in different dishes.

Key words: food, honeybees, nutritional properties, recipes, dishes

INTRODUCTION

Honey is a beekeeping product obtained by the transformation and processing of flower nectar or manna by bees, which is stored in the cells of the honeycombs to constitute the food of the bee family in the hive [5,6].

Due to their specific biological peculiarities, bees provide humans with important products, and through the action of cross-pollination of entomophilous plants, they ensure significant increases in production for many agricultural crops. Obtaining honey is the main goal of beekeeping in the present and in the past. Beekeeping has been practiced since the 7th century, before Christ, and there are many proofs of this. Mesopotamian tablets, as well as Egyptian papyri, mention that honey and beeswax were used as medicine[6].

The history of mankind is closely related to the history of honey. This bee product is presented in all cultures and is not only part of the human diet, but is also used in certain ritual ceremonies. The first honey-harvesting actions began about 15,000 years ago, and the first graphic representations denoting this fact were discovered in a cave in Spain [7]. Bee honey was used long ago by the Vikings, who stocked their ships with honey before going on long voyages. The Romans consumed it before battles, believing that honey made them stronger. They also used it to preserve fruit and fish. The Greeks had their own recipe consisting of honey, grated cheese, barley flour, which they considered very nutritious and which was called kikeon. The Egyptians made bread with honey, beer with honey and wine with honey. Honey was also highly valued by the Germanic peoples, who boiled it in water and let it ferment to obtain mead – a traditional drink of these peoples, replaced in the Middle Ages by wine. Around the year 1000, after Christ, honey was an important part of the diet of Europeans, being found in various forms: mead, honeycombs, cheese with honey, milk with honey, etc. [5].

The content rich in carbohydrates, especially hexoses (glucose and fructose) defines the nutritional value of bee honey. These sugars are assimilated directly by the human organism without requiring an elaborate digestion process. These substances are able to release energy throughout its digestion and metabolism. Unlike sugar, the energy from honey is all directed towards the body, so honey is an easily digestible food [8,9].

The color, appearance, taste and consistency make honey an extremely valued food, but the most important is its specific aroma, due to its content in essential (volatile) oils, the scent of honey being identical to the scent of the flowers from which it comes. Yellow

color predominates in nectar honey, the brown to green shade is rarely encountered. Honey collected in early spring has a bright yellow to orange color. The honey collected from the nectar of the outside of the flowers is almost colorless or has a greenish tint. The light yellow honey is specific to acacia, and the dark color is specific to mountain honey [2,4].

The taste is sweet, pleasant, sometimes with more or less pronounced nuances depending on its origin and composition, and when it ferments it gets a sour taste. This discreetly sour, refreshing shade, noticeable especially from the honey from fruit trees and acacia, is due to the combination of its aroma with the sweetness of the sugars in its composition and the acidity given by the organic acids. In the varieties of willow, chestnut, black grass honey, in addition to the sweet taste, a rather pronounced bitter shade is perceived [2,4].

Viscosity represents the resistance to picking honey and gives indications of its maturity and density. The viscosity of honey depends mainly on the water content and the temperature. Fresh honey is usually in the form of a dense, semi-liquid, semi-transparent substance, which gradually begins to crystallize and harden. Unripe honey oozes when spooned but swept honey wraps around it like a ribbon and oozes out as a thin thread that becomes discontinuous at some point, breaking. The water content greatly influences the viscosity of honey, the more water the honey contains, the more fluid it is [2].

For human consumption, it has a special value, containing a lot of inhibin (a very strong bactericide) and mineral salts (12.8-20 times richer in mineral salts than the floral one), calcium and magnesium presenting the greatest therapeutic interest as the human body assimilates much better these salts through natural nutrition than through synthetic administration [3].

The therapeutic value of honey is given by its chemical composition and determines it to be the support for a multitude of actions, having biological and pharmacological effects, such as: antibiotic and antibacterial; antioxidant; antianaemic; biostimulants; cardioprotective; cicatrizing; hepatoprotective; nutritious and energizing; immunostimulant; regenerative [5].

Honey is an important factor in the prevention of cardiovascular and liver diseases, digestive and bone diseases, respiratory diseases, oncological diseases, menopause, premature aging, prevents or normalizes deficiencies of vitamins, minerals, amino acids, helps the normal growth and development of children, is a energizing and a very good food, it prevents cavities [1,8].

MATERIALS AND METHODS

The paper carries out a bibliographic study on the nutritional properties of honey that give it a high nutritional value and its use as an ingredient in the preparation of various culinary preparations.

RESULTS AND DISCUSSION

In Yemen there is a species of trees called Sidr that have medicinal properties especially in the leaves and fruits, and the honey that is based on this shrub is extremely healthy. It is known to be an excellent aphrodisiac, antibacterial and anti-inflammatory and a perfect fighter for sinusitis [10].

Manuka honey is produced in New Zealand and Australia by bees that pollinate the flowers of the Manuka bush and is renowned for its antioxidant and antibacterial properties [11].

In Italy, the largest amount of honey collected is that produced from the strawberry tree, being also the richest in antioxidants. A wide variety of types of honey are produced

in this country, among the most special ones being cherry, lavender, eucalyptus, rosemary, and citrus honey [12].

In France honey is produced and consumed in very large quantities. The types of honey produced in France are willow, clementine and fennel honey, but this country excels in the production of polyfloral honey from different plant mixtures: Causse honey which is produced from blackberries, wild thyme and clover, Garrigue honey which is a mix of rosemary, thyme, lavender and clover. There are two types of seasonal honey that are registered as French brands, namely spring honey and dew honey [12].

Turkey produces 90% of the world's pine honey. This variety has a darker color than other types of honey, and its perfume and aroma resemble those of conifers [10].

Ethiopia produces a quarter of the honey on the African continent, the most prized variety being a white honey produced from the flowers of a local species of sage, but only at certain times of the year, after the rainy season [10].

In Slovenia, bees and their honey are promoted as an extremely important tourist attraction waiting to be exploited by foreigners who arrive here. Slovenians are proud to be the only country in the European Union that protects the local bee species - *Apis mellifera Carnica* [10].

Greece is one of the many countries where honey is highly valued and one of the few countries famous for dew honey. "Dew" is actually a term that describes the syrup excreted by aphids. Aphids are small insects that live on the surface of plants and feed on their sap. Aphids need amino acids and excrete a sweet syrup that attracts bees and ants. They collect it and turn it into pine honey (dew honey). The Greeks also have their own way of eating honey: on bread, along with feta cheese [12].

The use of bee honey in culinary technology has good results, as a sweetener or ingredient in the preparation of culinary preparations. Since it is an acidic food, honey can be effectively combined in cooking with baking soda, the latter added to liquid honey having the property of preventing the accidental burning of the sugar in the honey. Thus, the constant use of sodium bicarbonate in small amounts in recipes containing honey is indicated. Cooking with honey also has advantages, such as better taste and long-lasting freshness of dishes (cakes will stay fresh longer because honey retains moisture, thus preventing the formation of mold). To replace sugar in recipes, it must be taken into account that honey is sweeter than this. When cooking with honey, it must be taken into account that honey contains about 18% water, which causes a decrease in the amount of liquid used in cooking, using approximately a quarter of a cup of water for one cup of honey [13]. Thus, bee honey can also be used to prepare certain sauces, omelettes, purees, etc. [15].

One of the oldest cake recipes based on bee honey comes from ancient Armenian customs and is called *Marlenka*. It is said that the product was first conceived in the year 1704, in the Czech Republic, in the cafe of the Armenian Georgius Damascenus. For a long time, the recipe was lost, it was brought back to the attention of chefs by Gevorg Avetisyan, a descendant of Georgius. Together with his sister he opened a confectionery and they started producing the miracle cake, *Marlenka* [12].

Assortments of bread and various appetizers obtained from leavened dough increase their nutritional value by adding honey. Examples from this category include: a traditional *honey cake* made on the occasion of the Jewish New Year and the *Challah bread* that is served on the Sabbath for dinner [14].

Also, the assortment of cream soups can use honey as an ingredient to obtain a slightly sweet taste in balance with the taste of the other ingredients. Interesting in this sense are carrot cream soup with honey and coriander and pumpkin cream soup with honey and cloves [14].

In various sauces for meat, the use of honey as an ingredient has very good results. The meat-based dishes that use bee honey in the recipe are: chicken steak with honey-based sauce, pork steak with mustard crust mixed with honey, oven-baked chicken breast with garlic and honey sauce [14].

In the category of desserts, the use of honey improves the quality of the dough. The most famous honey desserts from Romanian cuisine are: honey and walnut cake, Honey sheets, Albina cake. We should also mention a famous dessert, Baclava, which has honey as its main ingredient [15].

A tasty and quick dessert idea consists of apple slices, seasoned with nutmeg and a little cinnamon and drizzled with honey. Another mixture that can be used for a delicious dessert or as such, spread on a slice of bread, can be a sauce consisting of aromatic, dark honey and finely grated orange peel [15].

The ability of honey to maintain its elastic texture and moisture after baking makes it ideal for various snacks. It can be combined with different types of cereals, muesli or granola. A great idea is honey cereal bars made from oats, egg, a little butter and honey. Peanuts, nuts, seeds or pieces of fruit can also be added, according to preferences [14].

In the category of drinks, a honey drink from the Russian lands and called *Medovuha* dates back to ancient times. This is a low alcohol drink sweetened with honey. It was first produced in the early 1800s in the cold regions of Russia. It has a very good taste and is very suitable for cool days. It is made from raspberries or blueberries and is made according to several recipes that have been adapted to date [11].

CONCLUSIONS

Bee honey has a high nutritional value due primarily to its content rich in carbohydrates, but also in vitamins and enzymes. At the same time, it is a versatile food that can be used successfully in obtaining various dishes and desserts.

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