International Journal of Biological Engineering and Agriculture
ISSN: 2833-5376
Volume 03 Number 02 (2024)
Impact Factor: 9.51
SJIF (2023): 3.916

www.inter-publishing.com

Article

Honey is a Source of Health

Rakhmatova Ma'suma Umarovna[1] Raimov Shakhboz[1]

1. Termiz State University
* Correspondence: dilnoza_xakimova96@mail.ru

Annotation: Nature allows mankind to use its wonderful gifts, namely honey, beeswax, bee glue (propolis), royal jelly, bee venom and bee pollen - all these are not only natural remedies against various diseases, but also health-restoring, rejuvenating, energizing and is a natural product that prolongs life. What is honey itself? Honey is a product resulting from the digestive process of bees, in which flower nectar is fermented by evaporation of excess moisture. Sugars with a complex structure (sucrose) change, that is, turn into glucose and fructose. The chemical composition of honey is very complex and diverse.

Keywords: honey, flower, disease nectar, carbohydrate, protein

1. Introduction

Bee honey is a very tasty and nutritious food [1−2]. Also, the characteristics of the healer are known to everyone [3−5]. It is difficult to say since when mankind used honey as a medicine and had a need for it, but it is clear that this unique product has been a companion of mankind for centuries. In addition to fruits and fruit-bearing plants, this ancient natural product has been widely distributed since ancient times and was considered the only food that is sweet and tasty [6−11]. Honey was widely used in baking, honey drinks, i.e. herbal tea with honey - infusions, kvass were prepared, sweets were prepared from seeds mixed with honey, and they were also eaten as a separate treat, etc. Over the past two centuries, sugarcane and sweet beet sugar have become much cheaper and more readily available.

Citation: Umarovna, R. M., & Shakhboz, R. Honey is a Source of Health. International Journal of Biological Engineering and Agriculture 2024, 3(2), 53-57.

Received: 10th Jan 2024
Revised: 11th Feb 2024
Accepted: 20th Feb 2024
Published: 27th Feb 2024

2. Materials and Methods

A lot of theoretical and practical work has been done to get information about honey, its importance, useful and harmful aspects. To know about the benefits of honey, first of all, what is honey? It is determined how it is produced by bees and from which species of bees. Based on theoretical data, bees are mostly family. A colony consists of one mother, several thousand workers and several hundred male bees. The length of the body of the queen bee is 20-25 mm, the weight is 200-250 mg, from spring to autumn, it lays eggs and performs other functions of the family. The wing covers half of the body, it differs in the load of the apparatus for collecting nectar and flower pollen. The reproductive organs of the queen bee are developed. One family has 60-80 thousand worker bees in summer and 10-15 thousand in winter. They can fly at a speed of 60 km per hour, fly 2-3 km or more away from the family, collect nectar and flower pollen, turn nectar into honey, make wax, feed larvae. performs tasks such as feeding, building a cage, guarding the nest. Bees have been kept since ancient times to obtain valuable products such as honey, propolis, wax,

royal jelly, bee venom, etc., as well as to pollinate agricultural crops and orchards. A family of bees collects 140-150 kg of honey in one season, and if 100 kg is used for the supply of bees, 40-50 kg of honey is extracted. Types of bees: Central Russian forest (black) bee breed (*Asalari millifera*) is one of the most common breeds. The bees are large, high in honey, resistant to cold, up to 100 kg of honey can be obtained from each family. Caucasian (Georgia) mountain-brown bee breed (*Asalari cavcasica*) - distributed mainly in Transcaucasia, Central Asia. The Carpathian Bee breed is common in the mountainous regions of Western Ukraine, in the Beehives and behind the Carpathians. The color is dark, the nature is soft, and the trunk is long. The origin of the Italian yellow bee (*Asalari ligustuca*) is considered to be Italy, and it is distributed in Canada, USA, Australia and New Zealand. Later it was brought to Finland, Japan, China and India. It was brought to Uzbekistan in 1964-1970. High productivity has been achieved in cotton-growing lands. The Far Eastern bee breed is widespread in the Far East (Primore, Khabarovsk).

When the honey extracted from bees was analyzed in laboratory conditions, it was found that it contains many useful, nutritious, medicinal, hormone, enzyme, steroid and other products.

3. Results and Discussion

It contains more than 300 different substances, organic alkalis, salts, carbohydrates, nitrogenous compounds (proteins, amino acids, amines, amides), many mineral substances, drugs, hormones, enzymes, high-quality essential oils, terpinoids, sterols, phosphates, lipids, mineral alkali salts, dextrins, etc. have been found. Since different plant nectars differ in sucrose content, mineral content, medicinal properties, etc., the honey obtained from them is also different. According to experience, the type of honey can be distinguished by its taste, color and smell. Light colored and (in some cases) dark marjumak (Greek) colored honey is the most valuable honey. There are linden, maple, clover, and akas species in the light shade. Dark-colored types of honey include peony, bud and juniper honey.

Honey can be dewy and floral. Dew honey is obtained by bees collecting the dew from the leaves of maple, poplar, walnut, oak, birch trees and other plants, as well as the sap secreted by some insects. This type of honey is dark in color and does not have a strong smell. It contains more minerals than floral honey. Dew honey is mainly used in the food industry. Some varieties of honeydew can be poisonous. At the same time, there are other varieties of dewy honey that are tasteless and do not melt in the mouth for a long time. Another type of honey is flower honey. Bees get it from the nectar of plant flowers. It is also possible that the obtained honey is a product of nectar collected from only one variety of plants. Bees collect nectar from the flowers of various types of plants. In addition to dewy and flower honeys, there is also "pionista" or poisonous honey. It is produced by bees during the collection of nectar from plants belonging to the Archafloraceae family (azalea, swamp, Archagul, etc.).

All symptoms of poisoning (dizziness, nausea, tremors) disappear within 48 hours when "Pionista" takes honey. Treatment can be accelerated by washing the stomach and drinking suppurative medicine. Tobacco honey is obtained by fermentation of nectar collected from tobacco flowers by bees. This dark brown honey smells of tobacco and has an unpleasant taste. Tobacco honey is not used in the food industry, but it is used to feed bees.

Bee honey is a very tasty and nutritious food product. Also, its healing properties are well known. It is difficult to say when mankind began to use honey as medicine, but it is clear that this unique product has been a companion of mankind for centuries. From time immemorial, this ancient natural product was very common and was considered the only sweet and tasty food, except for fruits and fruit-bearing plants. Honey was widely used in baking, honey drinks, i.e. herbal tea with honey - infusions, kvass were prepared, sweets

were prepared from seeds mixed with honey, and they were also eaten as a separate treat, etc.

Over the past two centuries, sugarcane and sweet beet sugar have become much cheaper and more readily available. However, sugar's healing properties and nutritional value cannot match that of honey. Interest in beekeeping products, especially honey, has increased in recent years. Currently, not only human experience, but also in serious scientific instructions, it is noted that this product is beneficial to the human body. Honey with its uniqueness has general healing properties. Its digestion by the body is 100 percent. This high-strength product is rich in carbohydrates necessary for the human body, and contains almost all trace elements and medicines. It includes mineral and antibacterial substances, useful enzymes, hormones, essential oils. All components of honey have their value, and they are correctly distributed in relation to each other, which, in turn, makes them more useful and effective for human health. Real natural honey is also highly valued for its anti-fungal, anti-biotic and anti-diabetic properties. With the help of honey, the gastrointestinal tract is free from harmful microflora. Beneficial bacteria necessary for the digestion process settle and develop there. When taking honey, thanks to the glucose present in it, the power of the cardiovascular system increases, and the self-protection function of the liver increases. In general, the body's ability to fight against infectious diseases increases. Glucose is also very nutritious. To normalize the high amount of acid, 1 tablespoon of honey is consumed 1 hour before or after eating, and when the amount of acid drops, it is consumed immediately before eating. Another fast-digesting carbohydrate is fructose. It is rich in substances and sources of energy necessary for the human body. Another benefit of honey is that it helps fight obesity. Honey is also very useful for patients on a strict diet or for those recovering from surgery. Consumption of this natural medicine helps in anemia, diabetes, toxicosis of pregnant women. Honey also has a very positive effect on the nervous system. When taken alone, Kunora relaxes, and when taken before sleep, it acts as a mild hypnotic and moderates the sleep process. To do this, mix 1 tablespoon of honey with a glass of warm water and drink. Bee products are an effective tool in the treatment of many gynecological diseases.

4. Conclusion

In conclusion, honey is currently used as the best remedy for preventing unpleasant situations. Therefore, there are no negative consequences. There are many diet foods that contain honey. The most useful of them is honey that has not been heat-treated, because at a temperature of 60 degrees, many useful and healing properties of this product are lost. If honey is added to various porridges, the quality of food taste and its nutritional value will increase. It is advisable to add honey to various medicinal pastes, fruit and vegetable soups, milk and curd dishes, various jellies, fruit salads, juices, cocktails, milk and other drinks. Food made from thorny plants mixed with natural honey is distinguished by its effectiveness. All products of bee keeping complement each other and increase the effect of other medicines.

REFERENCES

[1] Y. Ranneh, "Honey and its nutritional and anti-inflammatory value," *BMC Complement Med Ther*, vol. 21, no. 1, 2021, doi: 10.1186/s12906-020-03170-5.

[2] A. M. Ali, "Propolis, bee honey, and their components protect against coronavirus disease 2019 (Covid-19): A review of in silico, in vitro, and clinical studies," *Molecules*, vol. 26, no. 5, 2021, doi: 10.3390/MOLECULES26051232.

[3] H. Alexander, "The role of bacterial skin infections in atopic dermatitis: expert statement and review from the International Eczema Council Skin Infection Group," *British Journal of Dermatology*, vol. 182, no. 6, pp. 1331–1342, 2020, doi: 10.1111/bjd.18643.

[4] A. Hassoun, "Fraud in animal origin food products: Advances in emerging spectroscopic detection methods over the past five years," *Foods*, vol. 9, no. 8, 2020, doi: 10.3390/foods9081069.

[5] S. Homaeigohar, "Antibacterial biohybrid nanofibers for wound dressings," *Acta Biomater*, vol. 107, pp. 25–49, 2020, doi: 10.1016/j.actbio.2020.02.022.

[6] E. Han, "Model identification of proton-exchange membrane fuel cells based on a hybrid convolutional neural network and extreme learning machine optimized by improved honey badger algorithm," *Sustainable Energy Technologies and Assessments*, vol. 52, 2022, doi: 10.1016/j.seta.2022.102005.

[7] M. A. I. Al-Hatamleh, "Antioxidant-based medicinal properties of stingless bee products: Recent progress and future directions," *Biomolecules*, vol. 10, no. 6, pp. 1–28, 2020, doi: 10.3390/biom10060923.

[8] A. Akhmetova, "Electrospinning proteins for wound healing purposes: Opportunities and challenges," *Pharmaceutics*, vol. 13, no. 1, pp. 1–22, 2021, doi: 10.3390/pharmaceutics13010004.

[9] S. P. Leonard, "Engineered symbionts activate honey bee immunity and limit pathogens," *Science (1979)*, vol. 367, no. 6477, pp. 573–576, 2020, doi: 10.1126/science.aax9039.

[10] M. F. Diaz-Basantes, "Microplastics in honey, beer, milk and refreshments in Ecuador as emerging contaminants," *Sustainability (Switzerland)*, vol. 12, no. 12, 2020, doi: 10.3390/SU12145514.

[11] M. M. Rady, "Exogenous gibberellic acid or dilute bee honey boosts drought stress tolerance in vicia faba by rebalancing osmoprotectants, antioxidants, nutrients, and phytohormones," *Plants*, vol. 10, no. 4, 2021, doi: 10.3390/plants10040748.

[12] H. T. Tangirov, N. K. Tangirova, and ..., "About the Nematodafaunas of Birds in the Pidmountary-Mountain Zone in the South of Uzbekistan," *International Journal of …*, 2023, [Online]. Available: http://eprints.umsida.ac.id/13082/

[13] K. Eshnazarov, B. A. Rakhmatullaev, and ..., "Analysis of the Fauna of Parasitic Nematodes of Tomato and Cucumber in Different Conditions of Agrocenosis," *… Journal of Biological …*, 2023, [Online]. Available: http://eprints.umsida.ac.id/13239/

[14] K. R. Shakhboz and ..., "Fauna of Vegetable Crops Parasitic Phytonematodes (In the Example of Greenhouse Conditions)," *International Journal of …*, 2023, [Online]. Available: http://eprints.umsida.ac.id/13083/

[15] B. A. Rakhmatullaev, K. Eshnazarov, and ..., "Free-Living and Phytoparasitic Nematodes in the Degrez Reservoir," *… Journal of Biological …*, 2023, [Online]. Available: http://eprints.umsida.ac.id/13238/

[16] S. A. M. Khalifa, "Bee pollen: Current status and therapeutic potential," *Nutrients*, vol. 13, no. 6, 2021, doi: 10.3390/nu13061876.

[17] R. Breia, "Plant Sweets: From sugar transport to plant–pathogen interaction and more unexpected physiological roles," *Plant Physiol*, vol. 186, no. 2, pp. 836–852, 2021, doi: 10.1093/PLPHYS/KIAB127.

[18] J. Hamulka, "Dietary supplements during covid-19 outbreak. Results of google trends analysis supported by plifecovid-19 online studies," *Nutrients*, vol. 13, no. 1, pp. 1–17, 2021, doi: 10.3390/nu13010054.

[19] X. Li, "A Secure Three-Factor User Authentication Protocol with Forward Secrecy for Wireless Medical Sensor Network Systems," *IEEE Syst J*, vol. 14, no. 1, pp. 39–50, 2020, doi: 10.1109/JSYST.2019.2899580.

[20] M. Martinello, "Antioxidant activity in bee products: A review," *Antioxidants*, vol. 10, no. 1, pp. 1–42, 2021, doi: 10.3390/antiox10010071.

[21] M. B. Paul, "Micro- And nanoplastics-current state of knowledge with the focus on oral uptake and toxicity," *Nanoscale Adv*, vol. 2, no. 10, pp. 4350–4367, 2020, doi: 10.1039/d0na00539h.

[22] A. A. Majewska, "Planting gardens to support insect pollinators," *Conservation Biology*, vol. 34, no. 1, pp. 15–25, 2020, doi: 10.1111/cobi.13271.

[23] M. F. Neves, "Global orange juice market: a 16-year summary and opportunities for creating value," *Trop Plant Pathol*, vol. 45, no. 3, pp. 166–174, 2020, doi: 10.1007/s40858-020-00378-1.

[24] S. W. Nicolson, “Sweet solutions: Nectar chemistry and quality,” *Philosophical Transactions of the Royal Society B: Biological Sciences*, vol. 377, no. 1853, 2022, doi: 10.1098/rstb.2021.0163.

[25] V. Jové, “Sensory Discrimination of Blood and Floral Nectar by Aedes aegypti Mosquitoes,” *Neuron*, vol. 108, no. 6, pp. 1163–1180, 2020, doi: 10.1016/j.neuron.2020.09.019.

[26] L. S. Adler, “Flowering plant composition shapes pathogen infection intensity and reproduction in bumble bee colonies,” *Proc Natl Acad Sci U S A*, vol. 117, no. 21, 2020, doi: 10.1073/pnas.2000074117.

[27] D. J. McNeil, “Bumble bees in landscapes with abundant floral resources have lower pathogen loads,” *Sci Rep*, vol. 10, no. 1, 2020, doi: 10.1038/s41598-020-78119-2.

[28] N. A. Didaras, “Antimicrobial activity of bee-collected pollen and beebread: State of the art and future perspectives,” *Antibiotics*, vol. 9, no. 11, pp. 1–29, 2020, doi: 10.3390/antibiotics9110811.

[29] P. P. Machado, “Ultra-processed food consumption drives excessive free sugar intake among all age groups in Australia,” *Eur J Nutr*, vol. 59, no. 6, pp. 2783–2792, 2020, doi: 10.1007/s00394-019-02125-y.

[30] B. Amoutzopoulos, “Free and added sugar consumption and adherence to guidelines: The UK national diet and nutrition survey (2014/15–2015/16),” *Nutrients*, vol. 12, no. 2, 2020, doi: 10.3390/nu12020393.

[31] "From the masterpieces of the treasure of medicine", Tashkent "Medicina". 2018 y.

[32] "Take your pain", Tashkent "Ibn Sino" publishing house. 2014.

[33] "Honey is a cure for a thousand pains" Tashkent "Sparks of literature" publishing house. 2014 y.

[34] Asal solamatlik manbaidir. Toshkent. “Davr press”. NMU. 2016 y.