



THERAPEUTIC AND NUTRITIONAL VALUES OF HONEY [MADHU]

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ABSTRACT

Honey is the name given to the sweet, yellowish liquid that is produced by honey bees. Bee's honey is one of the most valued and appreciated natural substances known to mankind since ancient times. The medicinal properties of honey have been known since ancient times. There are many types of bee's honey mentioned in Ayurveda. Their effects differ and 'Makshika' is considered medicinally the best. According to Modern scientific view, the best bee's honey is made by *Apis mellifera Capensis*. The aim of this study is to emphasize the importance of bee's honey and its multitude of medicinal, cosmetic and general values. Synonyms, constitution, properties and the uses of bee's honey are gathered from text books, traditional and Ayurvedic physicians and from few search engines. Honey has been useful in the treatment of surgical wounds, burns, and decubitus ulcers, eye diseases, throat infections, Tamak Shwas (Bronchial asthma), tuberculosis, hiccups, thirst, dizziness, fatigue, hepatitis, Krimi (Worm infestation,) constipation, Arsha (piles), eczema and the antibacterial and antifungal properties of honey have been well documented. It is used as a nutritious, easily digestible food for weak people. It promotes semen and mental health. Aged honey is used to treat vomiting, diarrhea, rheumatoid arthritis, obesity and diabetes mellitus. Honey is highly popular in cosmetic treatment.

Keywords: Honey, Makshika, Madvika, Madhu, Kshaudra

INTRODUCTION

Forest is the heart of the environment. Though silent, it provides an everlasting and priceless service to this universe. Environment supplies every need of the forest and reproduction is very essential in maintaining this chain. The reproduction of plants helps to maintain the equilibrium of the environment and bees help this process by pollinating the flowers. The flowers which give beauty to the forest also provide foods to bees¹.

Bee's honey is one of the most valued and appreciated natural substances known to mankind since ancient times. It is used for its medicinal properties in many cultures. Honey has a long history of human consumption and is used in various

foods and beverages as a sweetener and flavoring. Honey is one of the foods which have religious significance.

These little insects are the pollinators that most of our crops depend on to set fruit. Honey bees are so important, in fact, that we have them to thank for 1/3 of the food we eat, including 80% of our fruits and vegetables. Crops that are highly dependant on honey bee pollination include avocado, almonds, kiwi and apples.²

Synonyms of Honey

Synonyms of Honey in Sanskrit are Madhu, Mashika, Madhvika, Kshaudra, Saragha, Makshikavanta, Varti, Vanta, Bhrungavanta and Pushparasodbhava.³

Scientific Classification of Bee⁴

Table 1: Scientific classification of bee

Kingdom	Animalia
Phylum	Arthropoda
Class	Insecta
Order	Hymenoptera
Sub Order	Apocrita
Superfamily	Apoidae
Family	Apidae
Subfamily	Apinae
Tribe	Apini
Genus	Apis

Table 2: Ayurvedic Classification of Madhu⁵

Latin Name	<i>Mal depuratum,</i>
Rasa	Madhura, Kashaya,
Guna	Guru, Ruksha,
Virya	Sheeta,
Vipaka	Katu,
Doshghanta	Tridosahara.

Physical and Chemical Properties

The physical properties of honey vary, depending on water content, the type of flora used to produce it (pasturage), temperature and the proportion of the specific sugars it contains. Fresh honey is a supersaturated liquid, containing more sugar than the water can typically dissolve at ambient temperatures. At room temperature, honey is a super cooled liquid, in which the glucose will precipitate into solid

granules. This forms a semisolid solution of precipitated glucose crystals in a solution of fructose and other ingredients.

Chemical Composition of Honey

The precise composition of honey varies according to the plant source, season and production method. Storage conditions may also influence final composition. But the

main constituents are the same in all honeys. Naturally darker honey has greater antioxidant properties. Acetic, Butanoic, Formic, Citric, Succinic, Lactic, Malic, Pyroglutamic, Gluconic acids and a number of aromatic acids are found in honey. Bee's honey is free of Cholesterol.

Nutritional Value of Honey

Honey is carbohydrate rich syrup prepared by honey bees. Fructose and Glucose are the major components but a large number of other chemical compounds are present in small quantities. The average composition of honey is given in table no.3. Given below is the amount of nutrients in 100 gm of honey⁶

Table 3: Nutritional Value of Honey per 100 g

Contents	Quantity
Carbohydrates	82.4 gm
Sugars	82.12 gm
Dietary fiber	0.2 gm
Protein	0.3 gm
Riboflavin (Vitamin B2)	0.038 mg
Niacin (Vitamin B3)	0.121 mg
Pantothenic Acid (Vit. B5)	0.068 mg
Vitamin B6	0.024 mg
Folate (Vitamin B9)	2 µg
Vitamin C	0.5 mg
Calcium	6 mg
Iron	0.42 mg
Magnesium	2 mg
Phosphorus	4 mg
Potassium	52 mg
Sodium	4 mg
Zinc	0.22 mg
Energy	300 kcal (1270 kJ)

Types and Qualities of Honey According To Ayurveda

According to the Charak Samhita, honey is of four types namely Makshika, Bhramara, Kshaudra and Paittaka. Makshika, the best type of Honey is produced by reddish variety of Honey bee. This type of honey is of the color of Tila Taila (Sesame oil). Bhramara honey is produced by the Bhramara type of bee. It is Guru (Heavy to digest) and is of white color. Kshaudra honey is produced by a small type of honey bee and is brown in color. Paittaka honey is produced by a large type of bee and is of the color of ghee.⁷

According to Susrutha Samhita, honey is of eight types. Pauttika, Bhramara, Kshaudra, Makshika, Chatra, Arghya, Oudalaka and Dala Madhu.⁸

According to Bhavprakash, honey is of eight types. Makshika, Bhramara, Kshaudra Pauttika, Chatra, Aarghya, Oudalaka and Dala Madhu. Their Qualities are as follows⁹

- Makshika honey is collected by large honey bees. It is Laghu (lighter than Kshaudra), Ruksha (Dry). It's useful in Kamla (Jaundice) Arsha (Piles) Kshata (Phthisis) Kasa (Cough) diseases. It is the best and especially beneficial in diseases like Asthma.
- Bhramara honey is collected by large bees. This honey is Guru (heavy - not easily digested) because of its Picchila (Slimy) and Ati Swadu (excessively sweet) properties. It is Rakta Pitta shamak.
- Kshaudra honey is collected by medium sized honey bees. It is Sheeth (Cold), Laghu (light - easy to digest) and Lekhana (Anti-obesive). It is the best and especially beneficial in diseases like Prameha (Diabetes).
- Pauttika honey is collected by very large bees from the nectar of poisonous flowers. It is Ruksha (Dry), Ushna (Hot), it increases Vata, Rakta and Pitta, and this is also

Chedana (liquefaction). It produces burning sensation in the chest. It is also a sedative and reduces fat. It is useful in disease like Diabetes and Dysuria.

- Chatra honey is Madhura (Sweet after digestion), Guru (heavy), Sheetha (Cold) and Picchila (Slimy). It cures bleeding disorders, leucoderma (Shwitra), urethritic discharges and worm infestations.
- Arghya honey is beneficial for eyes, eliminates vitiated Kapha and Pitta Dosha, Kashaya (Astringent in taste), Katu Vipaka (Pungent after digestion) Balya (Strengthening).
- Oudalaka honey is useful in skin diseases and helps in modulation of voice. It is Kashaya (Astringent) and Amla Rasa (Sour), Katu Vipaka (Pungent after digestion) and aggravates Pitta.
- Dala honey is Ruksha (Dry). It mitigates vomiting and diabetes mellitus.

According to Sushruta, some actions of fresh and aged honeys are very much opposite to each other. Fresh honey has Bruhana guna (Nourishing the body) but it does not eliminate vitiated Kapha Dosha much and is a laxative. Aged honey is Grahi (Anti diarrheal), reduces fat and obesity.⁸ Ayurveda explains another special quality of honey. Honey is known as "Yogavahi" - since it has a quality of penetrating the deepest tissue. When honey is used with other herbal preparations it enhances the medicinal qualities of those preparations and also helps them to reach the deeper tissues.

Properties of Mature and Immature Honey According To Ayurveda

According to Sushruta, mature honey eliminates vitiated Tridosha while immature honey vitiates Tridosha and is sour in taste.⁸ It is the best Yogavahi substance. That is to say, while without changing its own properties, honey carries the effects of the drugs added to it. It means it enhances the properties and actions of the substances with which it combines.⁹

Properties According to Modern Science

Experiments and studies on honey have shown that honey is antiseptic, antimicrobial, antipyretic, anti-inflammatory, antiallergent, antitoxic, sedative, laxative, antianemic, antioxidant, healing and cleansing (external and internal), moisturizing and blood-purifying. It promotes rehydration, easily digestible, stimulates immunity, and is beneficial for all types of skins diseases.

Religious Significance⁶

In Hinduism, Madhu (Honey) is one of the five elixirs of immortality (Panchamrita). In temples, honey is poured over the deities in a ritual called Madhu abhisheka. The Vedas and other ancient literature mention the use of honey as a great medicinal and health food.

In Buddhism, honey plays an important role in the festival of Madhu Purnima, celebrated in India. The day commemorates Buddha's making peace among his disciples by retreating into the wilderness. The legend has it that while he was there, a monkey brought him honey to eat. On Madhu Purnima, Buddhists remember this act by giving honey to monks. The monkey's gift is frequently depicted in Buddhist art.

Medicinal Uses of Honey

Honey has been found to bestow a number of health and nutrition benefits. It may be used alone or in combination

with other substances, and is administered both orally and topically. Some of which have been mentioned below.^{9,10}

- **Cut and wounds:** Apply bee's honey on cuts and wounds.
- **Eyes:** Honey is very good for eyes and eyesight
- **Appetite:** Honey is good for improving appetite, especially in children.
- **Burns:** Apply fresh bee's honey directly.
- **Premature aging:** Mix 4 tablespoons of honey, one teaspoon cinnamon, 3 cups of water and leave a boil. Addressing 1/4 cup, 3 to 4 times a day revive the skin, the skin, and stop premature aging.
- **Cardiac Tonic:** Honey contains flavonoids, antioxidants which help reduce the risk of heart disease.
- **Blood sugar regulation:** Even though honey contains simple sugars, it is NOT the same as white sugar or artificial sweeteners. Its exact combination of fructose and glucose actually helps the body regulate blood sugar levels. Some honeys have a low hypoglycemic index, so they don't jolt your blood sugar.¹¹
- **Arthritis:** Place a spoonful of honey with two tablespoons of warm water, one teaspoon cinnamon, Make the dough and rub the affected area, the pain will disappear within minutes. Drinking a glass of warm water with two tablespoons of honey and one teaspoon cinnamon, morning and evening to ease the pain of arthritis and cure¹¹.
- **Bladder infections and Dysuria:** Mix two tablespoons of cinnamon, one teaspoon of honey in a cup of warm water and drink it. This drink eliminates the bacteria in the bladder.¹²
- **Eyesight:** 10 ml of honey mixed with 10 ml of carrot juice and consumed regularly will improve eyesight¹²
- **Cold and cough:** Mix 10 ml of honey with equal quantity of ginger juice and consume twice a day.¹²
- **Obesity:** Keep garlic immersed in bee's honey for one year. Then, use 1 clove of garlic daily before breakfast. This is used as a home remedy. One glass of warm water taken with 10 ml of honey and 5 ml of lemon juice in early morning reduces fat and purifies blood¹²
- **Skin Disorders:** Applying honey and cinnamon powder in equal parts on the affected parts of skin helps to cure eczema, ringworm and many other types of skin infections.¹²
- **Bad Breath:** In the morning, gargle with one teaspoon of honey and cinnamon powder mixed in hot water, so breath stays fresh throughout the day. It maintains dental hygiene and cleanliness of the smell of the mouth.¹²
- It also acts as a good carrier for other medicines. Honey increases the beneficial qualities of the medicines it carries. It is for this reason that honey is used as a base for a lot of medicines.
- Honey has a laxative effect on the digestion system of an individual and helps provide relief from constipation.
- **Cholesterol:** Two tablespoons of honey, cinnamon and 3 tablespoons water in 16 oz tea, can reduce cholesterol by 10% in only two hours. If they dealt with treatment 3 times daily for a week may heal completely. Eating a tablespoon of honey taken before food cholesterol protects against infection
- **The Immune System:** The regular use of honey per day with cinnamon strengthens the immune system and protects the body from bacteria and viruses. Honey

contains many vitamins and iron. The daily use of honey strengthens the white blood corpuscles to fight bacteria and viral diseases.

Cosmetic Uses of Honey

Honey is used in the beauty industry as a skin moisturizer, softener and to heal the skin tissue. Some cosmetic applications of bee's honey are given below¹³

- **Face wash:** Mix a small quantity of lemon juice into 5ml of bee's honey and apply on face before washing.
- **Facial to improve smoothness:** A tablespoon of honey whisked together with white of an egg, 1 teaspoon of glycerin and 1/4 cup of flour makes an excellent firming mask. Just smooth on the face, leave on 15 min, and rinse off with warm water¹⁴.
- **Cracked lips:** Apply bee's honey on cracked lips¹³.
- **Hair luster:** Mix 5ml of bee's honey into 4 cups of warm water. Use as a hair rinse¹³.
- **Conditioner:** Mix 10 ml of olive oil into 5ml of bee's honey and apply on hair. Wash after 15 min¹³.

Home Remedies that use Honey

- Mix 2 teaspoons of honey with carrot juice and consume regularly. This helps to improve eyesight and is very helpful for those who sit before a computer for long hours
- A mixture of black pepper powder, honey and ginger juice in equal quantities, when consumed thrice daily helps to relieve the symptoms of asthma
- Regular use of one teaspoon of garlic juice mixed with two teaspoons of honey helps to control blood pressure
- One glass of warm water taken with two teaspoons of honey and 1 teaspoon of lemon juice in the early morning reduces fat and purifies blood
- Consuming one spoon of honey daily helps us to lead a healthy long life.

Dose

Daily dose for children is 20-25 grams and an adult is 40-50 grams.

Some Precautions before Using Honey

- Honey should never be heated nor added to hot things. Also, do not drink hot water after eating honey.
- Honey should not be consumed when you are working in a hot environment
- Honey should never be mixed with rain water, spicy foods and fermented beverages like whisky, rum and brandy
- Do not eat honey in excess.
- Store honey in glass or china containers only. Never store in metallic containers.
- Avoid giving honey to infants under 12 months to avoid the risk of botulism (A type of bacterial food poisoning)
- Allergic reactions to honey have also been reported in individuals allergic to pollen.
- It is recommended that diabetics avoid honey as it is at least 20 percent sweeter than sugar.
- Honey sometimes contains dormant endospores of the bacterium *Clostridium botulinum*, which can be dangerous to infants, as the endospores can transform into toxin-producing bacteria in the infant's immature intestinal tract, leading to illness and even death².

DISCUSSION

Honey is a valuable product of nature with time-proven, universally accepted medicinal, dietary and cosmetic properties. It has some cultural and religious significance too. Honey can be used singly or in combination with other ingredients in treatment of various diseases. It also has the rare and invaluable quality of enhancing the properties and actions of the medicinal substances with which it combines. While due to its antioxidant properties Honey acts as a rejuvenator, it is also an important ingredient in beauty culture as a moisturizer and a conditioner.

CONCLUSION

It can be concluded that honey is an invaluable natural substance with many diverse usages. It is an effective medicine, a safe home remedy, cosmetic and a nutrient usable by people of all ages. Honey is a miraculous food prepared by bees worth more than its weight in gold. It is a natural food that never goes bad.

Bee's honey could be considered as one of the finest products of nature that has a wide range of beneficial uses. Nutritional values also suggest that Madhu (Honey) strengthen the immunity and helps to maintain the health by preventing various types of diseases. Honey is considered as a balanced diet and equally popular with both sexes in all ages.

REFERENCES

1. Ediriweera E, Premaratna N. Medicinal and cosmetic uses of Bee's Honey - A review. *AYU* [serial online] 2012 [cited 2013 Mar 18]; 33:178-82. Available from: <http://www.avujournal.org/text.asp?2012/33/2/178/105233>
2. Wikimedia Foundation, Inc., Honey, 2013. Available from: <http://en.wikipedia.org/wiki/Honey> [Last modified 17 March 2013]
3. Shastri Brahmarshankar, Commentator, Vidyotini Hindi commentary, In Bhavprakash, 6th edition. Varanasi, Chaukhamba Sanskrit Sansthan 1984 Verse No. 6 Pg.no.788
4. Wikimedia Foundation, Inc. Honey bee, 2013. Available from: http://en.wikipedia.org/wiki/Honey_bee [Last modified 17 March 2013]
5. Shastri Brahmarshankar, Commentator, Vidyotini Hindi commentary, In Bhavprakash, 6th edition. Varanasi, Choukhamba Sanskrit Sansthan 1984 Verse No. 2 Pg.no.788
6. Wikimedia Foundation, Inc., Honey, 2013. Available From http://en.wikipedia.org/wiki/Honey#cite_note-Comp-44 (Accessed on 2013 March 10)
7. Dash RK. Editor, In Charak Samhita, Vol. 1, Varanasi. Chaukhamba Sanskrit Series, 1972. Page no. 540-2.
8. Jadavaji Trikamji Acharya, Editor, Susruta Samhita, 7th edition, Varanasi, Chaukhamba Orientalia, 2002; 207-8. Verse 45/132-142,
9. Shastri Brahmarshankar, Commentator, Vidyotini Hindi commentary, In Bhavprakash, 6th edition. Varanasi, Chaukhamba Sanskrit Sansthan 1984 Verse No. 6 Pg.no.788
10. Bhavprakash, Vidyotini Hindi commentary by Brahmarshankar Shastri, 6th edition. Madhu Varga, Verse No. 3 Pg.no.788, Chowkhamba Sanskrit Sansthan Varanasi, 1984
11. Needham AW. Health benefits of honey, 2008. Available from: <http://www.bees-online.com/HealthBenefitsOfHoney>. [Accessed on 2013 March 10]
12. Krishna RS. Therapeutic Uses of Honey in Ayurveda, 2005. Available from: <http://www.boloji.com/ayurveda/av045.htm>. (Accessed on 2013 March 10)
13. Needham AW. Health benefits of honey, 2008. Available from: <http://www.bees-online.com/HealthBenefitsOfHoney.htm>. [Last cited on 2009 Oct 12].
14. IndiaMART InterMESH Limited, Honey, Not mentioned. Available from: <http://www.naturalcosmeticsupplies.com/bee-honey.html>. [Last cited on 2010 Jan 28].

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