



Journal of Indian Medicine

Ayurved Darpan - Journal of Indian Medicine

An International Quarterly Publishing
Peer Reviewed Journal

Review Article

REVIEW OF HONEY WITH REFERENCE OF AYURVEDA AND MODERN SCIENCE.

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Article Received on: 16/09/2017

Accepted on: 27/09/2017

ABSTRACT:

In Ayurved science two types of medicine are used. One is prepared from plants (*Audhbhidh*) and other collects from animals (*Jangam*). Honey is one of the animal product prepared by the honey bees. In *sushrutsamhita* and *nighantu* properties and uses are well described. In *bhavprakash* 8 types of honeybees are described with special properties of honey. In modern science 4 types of honeybees are described. Honey is useful in various disease it is mostly used as catalyst (*yogvahi*). As per modern science honey contains various component and different types of sugar.

KEY WORDS: Honey, honeybees, utility, composition.

INTRODUCTION:

Now a days most people comes to use natural product .Honey is one of them. Honey is used from ancient time. Greek scientist Hippocrates prescribed a simple diet favouring honey given as oxymel (vinegar and honey) for pain, Honey and water for thirst. Honey is collected from honeycomb. Quality and physicochemical properties of honey were varied based on the geographical and botanical origins, handling, transportation and storage conditions. These honeybees have various colors and species. Honeybees collect honey from various colorful flowers , so taste and color of honey depends upon the type and colors of flowers. e.g. *Nimbpushpa* - Honey is liquid and *vishnashak*. Dark flowers - Honey is of dark. Rose flower - Coolant honey. Honey is useful in infant and also use in female problems like *shwetpradar*, *yonivypad* as a *madhuvarti*. It is used in respiratory disease like *swas*, *kas*. Mostly used as a *varnashodhan*, *ropan*.

Honey is also known as *madhu*, *madhvik*, *kshaudra*, *saragha*, *vartivant*, *bhrighvant*, *pushparodbhav*.^[1]

Aim:

To collect the information of honey as per Ayurveda and Modern science

Objectives:

1. To study the properties and utility of honey from *samhita* and *nighantu*
2. To collect the composition and uses of honey from modern science.

MATERIAL AND METHODS:

Method:

To collect the all data of honey from *samhita*, *nighantu* and modern science . All data represent as the information.

Table no. 1 : Types of honeybees and their properties as per Ayurveda -

Types of honeybees	Form of honeybees	Properties of honey
1. <i>Makshik</i> ^[2]	Big, yellowish	Oily color, useful in <i>netrarog, kamla, arsh, swas, kas, vranaropan</i>
2. <i>Bhramar</i> ^[3]	Small, yellowish	<i>Spatikasam, guru, abhisandhi, raktapitashamak, mutravrodhak, tarpan</i>
3. <i>Kshaudra</i> ^[4]	Small, yellowish	As like <i>makshikmadhu. Pramehanashak</i>
4. <i>Pouttik</i> ^[5]	Small like mosquito, black colored	Ghee like <i>,laghu,ushna, pramehnashak, mutrakrishranashak, sangrahi,vrananashak</i>
5. <i>Chatra</i> ^[6]	Yellowish	<i>Kriminashak, shwetkushta, raktapitta, prameha, Vishnashak</i>
6. <i>Arghi</i> ^[7]	Yellow, pin point mouth	<i>Kaphapittanashak, netrya, kashaya-katu rasa</i>
7. <i>Auddalak</i> ^[8]	Blackish yellow	<i>Swarya, ruchikar, kushthanashak, kashay-amalarasa, katuvipak</i>
8. <i>Daal</i> ^[9]	-----	<i>Bahurangi, agnivardhak, kaphanashak, prameha-nashak, madhur-amlakashaya rasa</i>

New honey^[10] – up to one year .

It is *guru, abhishandhi, sarak, pushtikarak*

Old honey^[11] - after one year .

It is *grahi, medolekhan, sthaulyahara*

Hot honey^[12] - It is poisonous.

Can be used in *vaman* and *niruhabasti*.

Pakvahoney^[13] – *Tridosahara*

Amahoney^[14] – *Tridoshakara*

Properties of honey^[15] -*Madhur*(sweet), *kashay*(astringen taste), *ruksha*(dry), *laghu*(light to digest), *sheeta*(coolant), *yogvahi*(catylist), *suksma*(penetrate deep in body channels), *vishad*, *shodhan-ropan*(cleanness and heals wounds), *ushna, medhakar, dipan*(improves appetite), *varnya*(improve skin complexion), *lekhan, ruchikar* (test improve), *swarya* (improves voice quality), *sandhan*(heals wound and fractures quickly), *prasadhan*(improve skin quality), *netrya*(improve vision)

Vipak- Katu,

Virya-Ushna,

Prabhav- Kaphghana.

Examination of good honey -

1. When Drop of honey put in water it does not spread.
2. When cotton dip in honey and if you burn it then it burns immediately.
3. Any bee cannot be trapped in honey.

4. When we add alcohol in honey, it becomes clear and if there is mixing of sugar or jaggary it does not clear.

Types of honey bees as per modern science ^{[16]:}

1. Apies dorsata Fabr. (Rock bee)
2. Apies indica Fabr. (indian hive bee)
3. Apies florae Fabr. (little bee)
4. Melipona (dammer bee)

Types of honey ^{[16]:}

1. Apiray - It is prepared from honeybees by using modern technic. It is transparent and pure.
2. Forest honey - It is collected from forest and it may be polluted and impure.

Composition of honey^{[16]:}

1. Carbohydrates 80% (all types of sugar)
2. Water 18%
3. Amino acids, vitamin, minerals 2%
4. pH- 3.9 (3.4 to 6)
5. Glycemic index- 31 to 78
6. Calories- 60 to 64 in 1 table spoon (20gm)
7. Vitamins –B1,B2,vit c in trace.
8. Enzymes –Invertase, amylase, glucose oxidase, acid phosphatase.
9. Amino acids -18 types Proline is the main
10. Acids – Acetic acid, butyric acid, citric acid, formic acid (bee venom), gluconic acid, lactic acid, succinic acid, tartaric acid.

Table no. 2 : Content of honey:

Ingredient of honey	20gm honey	100 gm honey
1.Calories	60 to 64 Cal	304 cal
2.Carbohydrate	17.3gm	81gm
3.Fructose	8.1gm	32 to 38.5 gm
4.Glucose	6.5gm	28 to 31gm
5.Sucrose	Trace	1.3gm
6.Higher sugar (maltose, isomaltose, etc)	0.5gm	6gm

Table no. 3 :

Minerals in Honey	In 20 gm honey	In 100 gm
1.Potassium	11mg	50mg
2.Calcium	1.0mg	4.8mg
3.Magnesium	0.4mg	2.0mg
4.Iron	0.05mg	0.25mg
5.Zinc	0.03mg	0.15mg
6.Selenium	0.002mg	0.01mg
7.Chromium	0.005mg	0.02mg
8.Manganese	0.03mg	0.15mg
9.Phosphorous	1.0mg	5.0mg
10.Sodium	0.6gm	2.85gm
11.Vitamin c	0.1mg	0.5mg
12.Ash	0.04gm	0.2gm

Uses- [16]:

1. Antibacterial-salmonella, shigella, E coli due to presence of methylglyoxal (MGO)
2. Anti fungal- in some species
3. Anti viral- in some species
4. Anti oxidant due to their composition
5. Anti inflammatory-wound
6. Colitis – as like prednisolone effect.
7. Antineoplastic activity-In bladder cancer
8. Promotes weight loss- cleans the liver, remove toxins and flush out fat from the body

9. Boosts immune system- 1 to 2 spoon honey+lemon juice + warm water.
10. Cures cough and sore throat
11. Reduced the risk of heart disease by improving blood circulation and preventing clogging of arteries. This is possible because it reduces the level of LDL and increases the level of HDL. Also prevent the built up of plaque by removing cholesterol from the wall of the blood vessels.
1 to 2 table spoon honey + ½ tsf cinnamon + warm water reduces up to 10% cholesterol.
12. Alcoholic hangover - 2 to 3 table spoon honey will speed up the metabolism of alcohol.
13. Energy drink- due to more carbohydrate content.
14. Malignancy - Beneficial in treatment of cancer and side effects of radiation therapy and chemotherapy.
15. It improves eye sight and prevents cataract.
16. Adverse effects- Excess consumption of honey can cause anxiety, insomnia, hyper activeness in child, in hyperglycemic patients and in anti coagulant users.
17. In new born babies-Honey with ghee in unequal quantity^[17]
18. In yoni strav pipplyadi churna used with honey^[18]
19. In shwetpradar honey is used with amalkiswaras or churna^[19]
20. In shwetpradar honey varti with kashaya dravyachurna used in yoni[vagina]^[20]

Side effect and contraindications:

1. Honey is not recommended for people with diabetes.
2. Equal quantity of honey and ghee is incompatible and should not be consumed.^[21]
3. Honey along with ghee even in unequal proportion should not be consumed along with water.

Toxic effects of honey:

1. Honey and ghee should not be consumed together in equal quantities.
2. If pitta body type person consume honey in higher dose it produces blood disorder.
3. Radish enhances the toxic effects of honey.
4. Honey should not be mixed with excess hot water or hot milk.
5. Honey should not be used after prolonged exposure to excessive sunlight.

Crystallization of honey: It occurs as natural process due to separation of dextrose.

Fermentation of honey: poorly processed unripe honey with excessive moisture will have the growth of yeast and decomposes the sugars in honey in to acetic acid, carbon dioxide and water.

DISCUSSION:

Makshik honey is the best honey described in *bhavaprakasnighantu*. Honey having different properties as per types so we use in different disease. Honey act as antibacterial, antifungal and antiviral properties for some species. Wound healing and effective in burns, it is highly beneficial in treatment of irritating cough so honey use in cough syrup. Honey is one of the finest sources of heat and energy. Honey is work as preservative so used in ayurvedic medicines. Honey applied daily in eyes ,it improves the eyesight.Honey useful for various disease like *swas*(dyspnea), *kasa*(cough cold), *hikka*(hiccup), *Atisara*(diarrhea), *chardi*(vomiting), *trushna*(relieves thirst), *krumi*(worm infestation), *kushta*(skin disease)^[22]. Honey used as *anupan* due to *yogvahi*.

CONCLUSION:

Do not use honey in hyperglycemic patient. It is used as an energy drink for other people. Over use of honey produce adverse effect. Never use of honey with hot water or equal quantity of honey + ghee because it work as poison. Storage of honey in dry and cool place. It is good energy source due to various types of sugars, vitamins, minerals.Honey is useful for Infant, *strirog* patient and many more.

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Cite this article as:

[Kshitija S. Shinde, Review of Honey with Refrence of Ayurveda and Modern Science, ADJIM, 2017, 2\(3\): 146-150.](#)