



# International Journal of Research in Academic World



Received: 11/January/2023

IJRAW: 2023; 2(2):57-58

Accepted: 16/February/2023

## Wound Healing Properties of Honey (Madhu)

\*<sup>1</sup>Amol Shivajirao Patil and <sup>2</sup>Dr. Shilpa Badhe

\*<sup>1</sup>PG Student, Department of Shalyatantra, SMBT Ayurved College Nad Hospital, Dhamnagaon, Nashik, Maharashtra, India.

<sup>2</sup>HOD, Department of Shalyatantra, SMBT Ayurved College Nad Hospital, Dhamnagaon, Nashik, Maharashtra, India.

### Abstract

Madhu has the qualities of a Vranaropak, as described by the sixty Upakrama of Vrana control in the Sushruta Samhita. According to various effects attributed to Madhu's Madhura (sweet) Rasa, Kashaya (astringent) Uparasa, Ruksha (dry) Guna, Sheeta (cool) Virya, Madhura Vipaka, and Sukshma Marga Anusari (ability to permeate), the three vitiated Doshas, namely Vata, Pitta, and Kapha, are thought to be "pacified" by Madhu. While Madhura Rasa provides nutrients to the tissue, aiding in the development of granulation tissue, Kashaya Rasa delivers Lekhana (scraping), which promotes desloughing and prepares the area for healing. Madhu has extraordinary healing powers because of its Sodhana (purification), Ropana (healing), and Sandhana (union) activities.

**Keywords:** Honey (madhu), nirukti, wound healing

### Introduction

The honeybee, *Apis mellifera*, collects and alters nectar to create honey. It is a syrup full of carbohydrates that is made from the nectars and secretions of flowers and other plants. Researchers in medicine have just recently uncovered the folk remedy of honey, which has been used for centuries to treat both acute and chronic wounds. In the past, honey was used to cure a variety of conditions, including burns, boils, pilonidal sinus, venous, and diabetic foot ulcers. Recent research support honey's effectiveness in treating venous ulcers. Improvement in wound size and cleanliness was observed in individuals with malignant wounds following treatment with honey-coated bandages. Similar to this, applying honey to pressure wounds accelerated recovery. Additionally, honey has been utilised to decrease wound odors that isolate patients and create a social barrier for them.

Van Ketel described the honey's ability to kill bacteria more than a century ago and as a result, honey underwent a lot of investigation over the following decades. Honey's antibacterial action varies widely based on its botanical and geographic sources, as well as the conditions during collection, processing, and storage. The source also establishes the precise biochemical components that give honey its antimicrobial characteristics, and as a result, its clinical efficacy against various pathogenic strains. Hydrogen peroxide ( $H_2O_2$ ) production is thought to be the primary antibacterial activity of the majority of honeys. In order to make  $H_2O_2$ , the enzyme glucose oxidase (GOx), which is secreted into the nectar by bees during the production of honey, must be present<sup>3</sup>.

Gluconic acid and  $H_2O_2$  species are produced by the enzymatic oxidation of glucose by GOx. Due to a lack of free water, the enzyme is inactive in raw honey, which makes it necessary to dilute the honey in order to start the peroxide-dependent antimicrobial process. Other significant antibacterial properties that contribute to honey's non-peroxide activity include bee defensin-1 (Def-1), phenolic chemicals, low water content (osmotic impact), low pH (acidic environment), and methylglyoxal (MGO) (in *Leptospermum*-derived manuka honey).

The method of administration (application and convenience of use) and efficacy, which maintains the direct contact of the honey with the wound bed, are important complications of using honey in wound treatments. Traditional dressing materials must be preloaded with greater amounts of honey, which may result in dressing failure, leakage, and loss of antibacterial activity (efficacy), as well as increased peri-wound skin problems. Further, this can make it harder for dressing materials to absorb wound exudate, which could result in a failure of the dressing and an increase in the number of dressing changes, clinical visits, and dressing expenditures. Innovations that allow for persistent and direct wound bed contact with the honey and its therapeutic components may therefore be both clinically and financially successful.

### Chemical Composition of Honey

Depending on the plant source, season, and production process, honey's exact chemical make-up changes. The composition of the final product may also be affected by

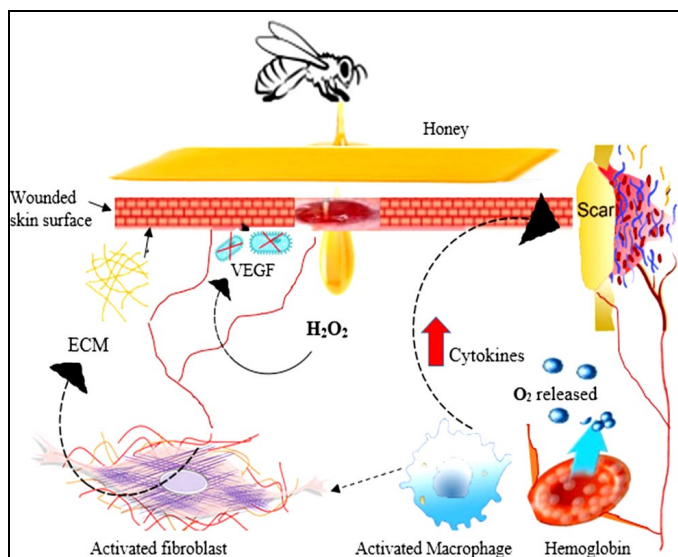
storage conditions. however, the All honeys share the same primary ingredients. Honey that is naturally darker naturally has stronger antioxidant effects. In addition to a number of aromatic acids, honey contains acetic, butanoic, formic, citric, succinic, lactic, malic, pyroglutamic, and gluconic acids. There is no cholesterol in bee's honey<sup>[4]</sup>.

**Nirukti:** Madhu's etymology Manyata iti madhu, which translates to "sweet, tasty, and pleasant," is said to be the origin of the word "madhu." Modern scientific substitutes for honey include: Honey, mel, clarified honey, filtered honey, and honey purified.

**Natural Resources:** The honey bees, *Apis mellifera* linn and other species of *Apis*, deposit a sweet secretion called honey in the honey comb. It may contain pollen grains but must be free of extraneous things like leaves or insect fragments. Some of the bee species that produce honey are *Apis cerana*, *Apis dorsata*, *Apis mellifera*, *Apis floria*, *Apis andreniformis*, *Apis koschevnikov*, and *Apis laborisa*.

### Method and Materials

sources used to gather the data Information for this study was gathered from a variety of Ayurvedic and biomedical dictionaries, Ayurvedic doctors, articles published in a variety of open journals, and a few search engines.



**Fig 1:** Shows wound healing mechanism of honey.

### Discussion

Since ancient times, honey has been regarded as a precious natural commodity. Honey's many components have helped it develop into a natural product with significant nutritional and therapeutic value, as well as a delicious liquid. Ayurveda mentions a variety of honey varieties. While Kaideva nighantu & Bhavprakash nighantu<sup>5</sup> madhu are classified as having 8 types in Sushruta samhita, Ashtang sangraha & Madanpal nighantu madhu are classified as having 4 types in Charak samhita. According to the sixty Upakrama of Vrana control outlined in the Sushruta Samhita, Madhu contains Vranaropak characteristics. The three vitiated Doshas, namely Vata, Pitta, and Kapha, are thought to be "pacified" by Madhu by a variety of effects attributed to its Madhura (sweet) Rasa, Kashaya (astringent) Uparasa, Ruksha (dry) Guna, Sheeta (cool) Virya, Madhura Vipaka, and Sukshma Marga Anusari (capacity to per While Kashaya Rasa offers Lekhana (scraping), which aids in desloughing and primes the wound for healing, Madhura Rasa supplies nutrients to the tissue, aiding in the creation of granulation tissue. As a result of its

Sodhana (purification), Ropana (healing), and Sandhana (union) acts, Madhu possesses exceptional healing abilities.

### Conclusion

Glucose oxidase is one of these enzymes, which catalyses the conversion of glucose into gluconic acid and hydrogen peroxide. The pH is lowered as a result of the generation of gluconic acid, and hydrogen peroxide increases its bactericidal effectiveness. As a result, in order to reduce the pH levels between 3.5 and 4, a number of processes necessary for tissue regeneration occur, including a decrease in wound-site protease activity, an increase in oxygen release from haemoglobin, and stimulation of fibroblast and macrophage activity. In addition, hydrogen peroxide production promotes VEGF and sterilises the wound<sup>[6]</sup>. Invertase, another significant enzyme made by honeybees, hydrolyzes sucrose into fructose and glucose to give honey a greater osmotic potential. Damaged tissues in the wound leak fluid, which causes the cellular tissues to dry out and the bacteria to die.

### References

1. Dash RK. Editor, In Charak Samhita, Varanasi. Chaukhamba Sanskrit Series, 1972; 1:540-2.
2. Jadavaji Trikamji Acharya, Editor, Susruta Samhita, 7th edition, Varanasi, Chaukhamba Orientalia, 2002; 207-8. Verse 45/132-142
3. Shastri Brahmashankar, Commentator, Vidyotini Hindi commentary, In Bhavprakash, 6<sup>th</sup> edition. Varanasi, Chaukhamba Sanskrit Sansthan. 1984; 6:788
4. Wikimedia Foundation, Inc. Honey, 2015. Available From: <http://en.wikipedia.org/wiki/Honey> (Last accessed on 12 Jan 2015, 5:35 pm)
5. Nadkarni AK. Indian Materia Medica, Popular Prakashan, Bombay, 2007; 2:191-195.