

THE HEALING PROPERTIES OF BEE GLUE (PROPOLIS)

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Abstract: *This article discusses the composition of beeswax propolis and its healing effect on the human body in various diseases and in the prevention of diseases. It discusses the healing effects of honey and its ability to reduce the toxic effects of drugs when used together with drugs and the versatility of its healing spectrum.*

Keywords: *propolis bacteriostatic bactericidal flavanoids inhibin terpenes extract.*

Bee glue, or propolis, is a natural product made by bees from resinous substances collected from the buds, bark, and branches of plants. Bees add their enzymes to these substances and use them to strengthen, disinfect, and protect their hives. The main composition of propolis consists of plant resins, wax, essential oils, polyphenols, flavonoids, vitamins, and microelements, and it is valued as a powerful natural remedy against various diseases. Bees often apply propolis to the walls of the hive, seal cracks, or apply it to entrances to protect themselves from microorganisms. Also, when there is an external threat or when a foreign creature enters the hive, they cover the creature with propolis and keep the hive disinfected.

The chemical composition of propolis depends largely on where it is produced and the plant source. In general, propolis contains 50–55% resin and balsam, 30% wax, 10% essential oil, 5% resinous substances and other

micronutrients. Flavonoids, phenolic acids, aldehydes, terpenes, vitamins B1, B2, B6, K and E play an important role in the health benefits of propolis. It also contains microelements such as iron, zinc, copper, manganese, which serve to strengthen the immune system of the human body.

The healing properties of propolis have been widely used in folk medicine for many years. It has strong antibacterial, antiviral, antifungal, anti-inflammatory and pain-relieving properties. It is especially effective in eliminating bacterial and viral infections in the body. Propolis reduces inflammation, accelerates wound healing, improves blood circulation and strengthens immunity. It is especially recommended to use propolis internally and externally for diseases such as flu, colds, angina, bronchitis. Propolis-based oils or ointments are effective for skin inflammations, cuts, burns.

Areas of application of propolis - propolis is widely used not only in medicine, but also in cosmetology, pharmaceuticals and even the food industry. In the medical field, ointments, drops, capsules, sprays made from propolis are widely used. It is used as a means of cleansing the respiratory tract, increasing immunity, and reducing pain. In cosmetology, propolis-based creams, lotions and masks are produced for face and body care, skin rejuvenation, and acne removal. In the food industry, it can be used as a natural preservative that extends the shelf life. The demand for propolis is increasing, especially in the production of organic and natural products.

Propolis is used in various forms, it can be chewed raw, drunk in the form of a water or alcohol solution, and applied externally in the form of an ointment or oil. Raw propolis is recommended to be chewed for inflammations in the oral cavity, sore throat, and toothache. Alcoholic propolis tincture is often used as a drink to increase immunity, treat internal inflammation, and fight viruses. At the same time, it can be applied to wounds as drops, and consumed for

abdominal pain. An aqueous solution of propolis is recommended for children, as alcohol tincture can be heavy for them. Before using propolis, it is important to test for allergic reactions, as some people may be allergic to bee products.

Modern scientific research has confirmed the many beneficial properties of propolis. Studies show that propolis is considered a natural alternative to antibiotics due to its antibacterial and antiviral effects. Propolis has been found to be especially effective against antibiotic-resistant bacteria. In addition, propolis also provides positive results in areas such as slowing the growth of cancer cells, regulating blood sugar, and maintaining oral hygiene. Propolis-based medicines and dietary supplements are widely used, especially in Brazil, Russia, Japan, and European countries.

It is important to store propolis properly. It should be stored in a dark, cool, and dry place, in an airtight container. Propolis can lose its beneficial properties when exposed to high temperatures or direct sunlight. Good quality propolis is usually brown or dark green in color, has a strong herbal aroma, and breaks easily in the hand. Artificial or low-quality propolis may contain harmful additives, so it should be purchased from a reliable source.

The main properties that are widely used in medical practice are bactericidal and bacteriostatic. Propolis slows down and destroys the growth and reproduction of many microorganisms, including tuberculosis bacteria, viruses, protozoa (*Trichomonas*), fungi (*Trichophytosis*), candidiasis, influenza and hepatitis viruses. In addition, propolis destroys and removes foreign cells, while preserving the natural microflora of the body. Therefore, the use of propolis does not harm the intestinal microflora and, unlike antibiotics, does not cause dysbacteriosis. Alcoholic and aqueous solutions of propolis have this property. It is important to note that propolis, regardless of how long it is used, does not have a negative effect on the human body. This is due to the fact that

bees collect the substance to produce propolis from many plants, each of which has its own unique properties. In other words, polyfloral propolis has the properties of many plants, which are harmful to microbes. They simply do not have time to adapt and resist it. And each plant has its own defense mechanisms. They also contain aromatic substances that are harmful to many microorganisms. They have a special substance called inhibin, which is very destructive for unicellular organisms.

1. Propolis inhibits the growth of viruses (smallpox, herpes, influenza A, hepatitis virus). This not only prevents their growth, but can also prevent the development of viral infections in the body.

2. The simultaneous use of propolis with antibiotics (streptomycin, tetracyclines) enhances the effect of these antibiotics, while the combination with penicillins and chloramphenicol does not have such an effect.

3. It is advisable to use propolis simultaneously with antibiotics, because in this case propolis simultaneously enhances the effect of antibiotics and maintains the intestinal microflora in a normal state. This effectively prevents dysbacteriosis in cases of severe or massive infection, when using strong antibiotics.

4. Propolis not only affects microorganisms, but also enhances phagocytosis - the process of removing foreign substances from the body by special cells - phagocytes, which contributes to less poisoning of the sick organism. Propolis helps the body get rid of infectious infections and quickly remove foreign substances.

5. Propolis, in addition to its antibiotic effect, exhibits anti-inflammatory properties, thereby preventing, weakening and stopping the development of the body's inflammatory response.

6. Strengthens the immune system, increases the level of gamma-globulins in the body (increases specific immunity to certain factors). It is good to use for viral infections (herpes, flu, hepatitis, encephalitis, etc.).

7. It is effective against the hepatitis B virus - it is used to treat and reduce complications after this dangerous disease. As part of complex medical therapy, it is both a treatment and a measure to prevent complications.

8. It has antitoxic properties. It is used for various types of poisoning. Even dysbacteriosis and many other diseases can be equated with poisoning. Any infection poisons the body. Propolis performs a wide range of functions in this case.

9. Propolis is an excellent painkiller. Here are the opinions of various researchers: a) alcohol solutions have better painkilling properties, while others believe that aqueous solutions are better; some researchers claim that propolis is 50 times stronger than novocaine, while others say that it is only 5-10 times; it enhances the effect of novocaine and other painkillers several times.

10. It has an excellent local effect: in the treatment of the oral cavity, gums, teeth, rinsing the teeth with propolis; - in case of damage to the gastric mucosa (gastritis - internal); - in otitis (inflammation of the ear - instillation of both alcohol solutions and aqueous solutions); - in the treatment of wounds, burns, frostbite - in the form of applying whole propolis or moistened wipes to the damaged area; - in case of eye injuries and burns - only an aqueous solution can be instilled. It is noted that pain relief begins within 5-10 minutes after applying propolis and lasts from 45 minutes to 2 hours.

11. There is information about the use of propolis in the treatment of strokes and heart attacks. Its use in the form of an aqueous solution reduced the formation of scars in the heart muscle, which was confirmed by ECG data. According to the clinic, even with large foci of infarction, the changes in muscle

tissue were not deep. It should also be noted that propolis has a unique ability to accelerate tissue regeneration when damaged. In addition, it does not form a rough and rough scar, but acts as the skin's own tissue. If a scar does appear, it is very soft and almost imperceptible.

12. The same property is used in cosmetics and in the treatment of external injuries - wounds, burns, frostbite, postoperative sutures, furunculosis, acne on the face.

13. Propolis affects capillaries, strengthening their walls - for nosebleeds and bleeding gums, for cuts and wounds, in the treatment of bruises, etc.

14. Increases the natural permeability of the skin - enhances the penetration of drugs through the skin to the site of injury. Therefore, propolis can be used simultaneously with other agents to enhance the effect.

15. Treats abscesses and pus. It accelerates the resorption process, while simultaneously increasing blood supply to the affected area. This, combined with its antibacterial, analgesic and other properties, reveals the unique properties of propolis.

16. Helps regulate blood clotting processes. This is especially useful in the treatment and prevention of complications after strokes and heart attacks, as well as in the treatment of varicose veins, as these conditions often lead to increased blood clotting, which can lead to many complications. Blood clotting also increases with age, so propolis is useful for everyone after the age of 55 as a preventive measure. Like all bee products, propolis works harmoniously with the body.

17. Propolis reduces itching in psoriasis and other skin diseases, pain after insect bites, itching and burns, and fungal infections of the feet.

18. Helps fight psoriatic process. It is widely used to treat this condition. It is included in the recipes and complex treatment of this difficult disease.

19. It is used to dissolve seals - due to its ability to control tissue formation processes. It has a dermatoplastic effect - stimulates the regeneration (healing) of normal tissues - its self-healing. Helps restore the integrity of the mucous membranes that cover many organs. Prevents the formation of rough scars after various injuries and is an effective tool in the treatment of various wounds, burns, frostbite, postoperative sutures, difficult-to-heal wounds.

20. Helps restore normal transparency of the eye lens in cataracts. For the prevention and treatment of primary cataracts, 1 drop of aqueous solution is instilled into each eye 2-4 times a day. The course can last up to 6 months, and sometimes up to 1 year. It is impossible to cure a formed cataract, so it is better to take preventive measures.

21. Helps the eyes adapt to the dark. Applying an aqueous solution to the eyes can facilitate this process.

22. Connective tissue restores the elasticity, strength, and flexibility of fibers and interarticular surfaces. This is necessary for the proper development of tissues in athletes, the elderly, after injuries, and during growth (for children).

23. Propolis has unique antitumor and antioxidant properties. It is involved in the localization (limitation) of the tumor process, the purification of cell membranes, the normalization of cellular respiration, the control of cell development processes in general, or rather, the stabilization of cell proliferation in our body. Therefore, it is recommended to consume propolis solution for people over 50 years of age.

24. There is evidence of the use of propolis in the treatment of endocrine diseases - it stabilizes the processes and harmonizes the activity of all endocrine glands. It was used as a substitute for prednisolone. The only thing to remember is that it reduces (suppresses) the function of the pancreas, lowers blood sugar,

which means that it should be used with caution in diabetes, especially when blood sugar cannot be stabilized and this should be taken into account in comatose states.

25. It has a mechanism for stabilizing cell membranes - in particular, it affects liver cells, restoring their function and improving the ratio of albumin and globulins in the blood, thereby contributing to the biochemical purification of the blood.

27. In small doses and concentrations, it enhances the motility and secretory function of the stomach and intestines. It is used for chronic constipation, colitis, gastritis, etc.; high doses eliminate intestinal activity and diarrhea. The diverse biological activity of propolis allows it to be widely used in medical practice. In view of this, it is very important to determine the range of changes in its biological activity, since the composition of propolis is not constant and varies significantly depending on the surrounding flora. It is known that within one breed, bees have a high degree of individual variability in terms of fluoromigration and fluorospecialization.

The pronounced therapeutic effect of propolis gives positive results in inflammation of the mucous membranes of the ear, throat, nose, oral cavity, skin diseases, burns, diseases of the respiratory and digestive systems, and difficult-to-heal wounds. Propolis increases bile secretion, reduces the number of stomach ulcers, lowers total cholesterol and triglycerides, and is a hepatoprotector. Propolis is a hypotensive agent. It lowers blood pressure, stimulates hematopoiesis, helps to eliminate cholesterol and triglycerides from the body, reduces blood clotting, relieves spasms of blood vessels, and stimulates the endocrine glands. Propolis is also effective in the treatment of chronic prostate diseases, cervical erosion, and a weakened immune system. It helps the body fight many infections and even cancer. In many cases, propolis

eliminates the need for antibiotics, especially in the postoperative period if there is no suppuration. When used in combination with antibiotics, it is a powerful tool for the treatment of purulent-inflammatory complications. Propolis is an excellent prophylactic and restorative agent. Treatment with propolis is very convenient at home. Tinctures, ointments or aqueous solutions can be easily prepared by anyone, and it is even easier for rural residents, for example, they can always find a beekeeper and buy propolis from him. All you need to know is how to prepare medicinal preparations and how to use them.

Although propolis is used to treat many diseases, from colds to malignant tumors - it cannot be considered a universal remedy. It is not a panacea; it is simply a highly effective natural substance with a complex composition and a variety of beneficial properties, which in some cases helps to recover due to its bactericidal properties, and in others - due to its immunostimulating, antitoxic and restorative effects. This substance is also valuable because it combines well with chemotherapeutic drugs, enhancing their therapeutic effect and at the same time reducing the likelihood of their side effects. Analyzing the data on the treatment of these diseases, it should be noted that the pathology is manifested not by a single factor, but by a combination of processes occurring simultaneously. At the same time, drugs used in official and extemporaneous formulations, each of which has a narrow therapeutic spectrum of action, and clinical conditions require the use of complex treatment (Frantsuzova, 1998). Taking into account the pathogenesis of diseases, modern methods and means of general and local therapy should include drugs with various effects (anti-inflammatory, antimicrobial, fungicidal, increasing the intensity of regenerative processes and the general level of immunity). Despite significant progress in chemical synthesis, natural raw materials, in particular bee products, remain a source of new therapeutic and prophylactic agents with a

unique structure and pharmacological effect (Lavrenova, 1997). The presence of biologically active substances in propolis, their ecological purity, and the availability of a sufficient raw material base contribute to its widespread use.

Conclusion

Propolis is a priceless gift of nature, which has long played an important role in strengthening human health. Its natural antibacterial, anti-inflammatory and immune-boosting properties have led to its recognition as an invaluable tool in both modern medicine and folk medicine. By using propolis correctly and in moderation, we can prevent many diseases, strengthen our health and improve the quality of life. Therefore, if everyone wants to support their health with natural means, propolis can be a reliable assistant on this path.

REFERENCES:

Literatura Alekseev S.A. Domashnee lechenie. Popular encyclopedia for domestic use. - Tolyatti: Anfas, 1993. - 288p. Arestova T.M., Serjantov G.I. Propolis candles and complex therapy of bacterial vaginosis // Apiterapiya segodnya. Material XI Vserossiyskoy nauchno-prakticheskoy conference "Apitherapy - XXI century". - Rybnoe, 2004. S. 99-100. Boyda Z., Kornetsky T. Primenenie propolisnyx inhalation posle intubatsii // Materialy XXXI Mejdunarodnogo kongresa po pchelovodstvu. - Bucharest: Apimondia, 1987. - S. 510. Brodzitski S., Srebro Z. Mitoticheskoe vozdeystvie pri kojnyx poraganiyax, lechimyx propolisom, vyyavlennoe putem avtorentgenografii s 3thymidinom // Materialy XXXI Mejdunarodnogo kongressa po chelovodstvu. - Bucharest: Apimondia, 1987. - S. 479. Vakhonina T.V., Milyukova T.I., Vakhonina E.A. Zagotovka propolisa, control kachestva i pererabotka // Materialy II Mejdunarodnoy nauchnoprakticheskoy konferentsii "Apiterapiya segodnya - s biologicheskoy apetokoy pchel v XXI vek". - Ufa, 2000. - S. 368-

373. Vakhonina T.V., Milyukova T.I., Vakhonina E.A. Vodnye fractsii propolisa // Novoe v nauke i praktike pchelovodstva. Materialy koordinatsionnogo soveshchaniya and conference VVTs. - M., 2003. - S. 208-211. Galinovsky S.P. Lechenie allergic dermatitis with propolis / Apiterapiya segodnya. Materialy VII nauchno-prakticheskoy conference po apiterapii. - Rybnoe, 2000. S. 164-165. Georgieva E., Vasiliev V. Primenenie propolisa v lechenii chronicheskikh pyelonephritov // Materialy XXIX Mejdunarodnogo kongressa po pchelovodstvu. - Bucharest: Apimondia, 1983. - S. 391. Georgieva E., Vasiliev V. Experimental and clinical application of propolis in chronic inflammation of the stomach // Materialy XXXI Beekeeping Congress. - Bucharest: Apimondia, 1987. - S. 481-484. Grashkin V.A., Orkin V.F., Grashkina I.G. Propolis and therapy of prostogo herpes // Apiterapiya segodnya. Materialy Mejdunarodnoy nauchnoprakticheskoy conference po apiterapii. - Ryazan, 2002. - S. 165. Dmitrieva N.V., Guzyukina E.P., Dmitriev A.V. i dr. Pathogenetic reasons for the use of propolis in the syndrome of srygivaniya and rvot u nedonoshennyx novorojdenneyx / Apiterapiya segodnya. Materialy VII nauchno-prakticheskoy conference po apiterapii. - Rybnoe, 2000. S. 131-134. Ermakova T.V., Fomina V.A. Propolis in chronic bronchitis // Apiterapiya segodnya. Materialy V nauchno-prakticheskoy konferentsii po apiterapii "Pchely i vashe zdorove" - Rybnoe, 1997. - S. 120-121. Jernov V.A. Apitherapy: educational method. posobie. - M.: Izd-vo RUDN, 2003. - 45p. Zommer-Urbanska S., Gniazdowski R., Boyarowicz H. Razrabotka tekhnologii izgotovleniya mazi s propolisom i ee primenenie v lechenii vazomotornogo katara // Materialy XXXI Mejdunarodnogo kongressa po chelovodstvu. - Bucharest: Apimondia, 1987. - S. 490-491. Ilevich L., Stoyko A., Jenovski H. Prakticheskoe primenenie standardizovannoy vytyajki propolisa v lechenii zubov i slizistoy obolochki

rotovoy polosti // Materialy XXXI Mejdunarodnogo kongressa po chelovodstvu. - Bucharest: Apimondia, 1987. - S. 491. Kasyanenko V.I., Dubtsova E.A., Komisarenko I.A. Chuvstvitelnost *Helicobacter pylori* to propolis // Innovative technologies in beekeeping. Material scientific-practical conference. Rybnoe, 2006. – S. 262264. Kendzia B., Houderna E. Izuchenie kombinirovannogo vozdeystviya propolisa i antimykoticheskikh medikamentov v sluchae *Candida albicans* // Materialy XXXI Mejdunarodnogo kongressa po chelovodstvu. - Bucharest: Apimondia, 1987. - S. 495-496. Kirillina E.I. Primenenie propolisa v otolaringologii / Apiterapiya segodnya. Materialy VII nauchno-prakticheskoy conference po apiterapii. - Rybnoe, 2000. S. 171-172. Kolesnikov O. Yu. Lechenie tyajelyx khimicheskikh ojogov glaz propolisom v experiment // Apiterapiya segodnya. Materialy V nauchnoprakticheskoy konferentsii po apiterapii "Pchely i vashe zdorove" - Rybnoe, 1997. - S. 126-128. Kolesnikova M.A. Efficacy of water and oil extracts of propolis for glaznyx zabolevaniyax // Apiterapiya segodnya. Material XI Vserossiyskoy nauchno-prakticheskoy conference "Apitherapy - XXI century". - Rybnoe, 2004. S. 73-75. Kolesnikova M.A., Kolesnikov O.Yu. Effectiveness of propolis in eye pathology // Materialy Mejdunarodnoy nauchnoy conference "Beekeeping - XXI century". - M., 2000. - S. 37-39.