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Bee Bread (Perga) – The Source of Health, Vitality and Longevity

Summary: The aim: The key to a healthy lifestyle using the bee bread.

Proper diet can satisfy all the needs of an organism for vitamins, minerals and other nutrients. However, the fast pace of life has forced the majority of people in the modern world to eat improperly (which entails skipping meals, fast food, insufficient fruit and vegetable intake, excessive intake of high-fat protein food, etc.). As a consequence, the organism lacks important vitamins and minerals, which are necessary for maintaining health. That is a sufficient reason for raising an alarm, which is why we must turn to bees and nature for help.

The methods: Bee products (such as honey, pollen, bee bread and royal jelly) are important natural supplements. Bee bread (perga) is, unlike collected pollen, a ready meal for bees and excellent food for humans at the same time. It contains over one hundred species of fungi, over eighty yeast types, over forty species of bacteria, as well as everything that is found in collected pollen from flowers: proteins, vitamins and minerals. The use of bee products is extremely important in the nutrition of children. It is commonly used for athletes and for people who are doing intellectual work. It is good for people with physical activity and for the elderly people. Because it improves the psychophysical state of the organism, especially when physical effort is increased.

Conclusion: Bee bread is an irreplaceable supplement to the daily diet; it is rich in high-quality protein, all essential amino acids, carbohydrates, fatty acids, vitamins B as well as vitamins K, E, D and C. It is especially rich in vitamin P (Rutin), provitamin A (β -carotene), various minerals and oligoelements (especially potassium and iron), essential oils, enzymes, pigments and other biologically active natural substances. As a result of the perfect balance in nature, bee bread is the only known natural food containing all the essential nutrients that a perfectly healthy human body requires. Bee bread will remain an outstanding, remarkable and unique bee product for a long time.

Keywords: Bee bread, bee product, nutrition.

Bee Bread “Perga” – The Source of Health, Vitality and Longevity



Nutrition plays an important role in the growth and development of the body from infancy to old age. Therefore, one should develop and nourish proper diet habits since early childhood in order to avoid suffering from sickness later in life.

We live in the time which provokes an unhealthy lifestyle, starting from the pollution of the environment and food and the exposure to various toxins – which we can hardly avoid – to unhealthy life habits that are our own responsibility. If we want to preserve our health, we need to make certain changes in our lives as a preventive measure. We cannot avoid some unhealthy lifestyle factors, but what we can do is influence our own habits by accepting the best that nature, of our health, has to offer us.

From a man’s perspective, life is so complicated, complex, hard, exciting, etc.

From a bee’s perspective, it all comes down to order, work and discipline, utmost dedication and unconditional sacrifice. Why is the story of a bee’s life so fascinating? Apart from being the main pollinators, bees are also the miracle of nature and we can admire their lifestyle and intelligence. Nobel Prize winner Karl von Frisch, discovered that bees have a memory for time and space, and they use this ability while building a new hive.

Albert Einstein claimed that “If the bee disappeared off the face of the Earth, man would only have four years left to live.” Nikola Tesla also spoke of bees in his works on them, their society and the structure in it. He considered that structure to be a perfection and predicted that mankind would also have the same kind of structure at its best. We come from nature and we should return to it. There are still undiscovered products in it which can complement our lives. As a perfect living organism without which there would be no life on Earth, the bee had to provide itself with a perfect diet rich in proteins, vitamins and minerals.

Our little pharmacists with wings are the perfect creatures that provide us with a wide variety of their products which they have collected in nature for our health. Honey, pollen powder, propolis and royal jelly have been used for over thousands of years now.

Bee pollen is essentially bee food.

Dr. Betty Lee Morales claims “Bee Pollen is the only known food which contains every essential nutrient needed by mankind for perfect health.

Pollen is collected by bees from flowers, mixed with honey and other ingredients from the hive, and stored in sacs on their hind legs to carry from one flower to another. Once the bee has collected enough pollen, the mixture stored in their legs condenses into small granules. Bee keepers use devices to remove this pollen to be sold as a commercial food product for humans to eat. It’s outstanding from a nutritional perspective, as it contains 22,7% protein, has a high level of vitamin B, including B6 and B12 which are fantastic vitamins needed this time of year for uplifting energy and strengthening the mind. It’s a great source of vitamin C, and Rutin which strengthens the capillary system and is one of the richest sources of antioxidants, and includes minerals such as zinc (great for anyone with prostate problems) as well as significant amounts of potassium, calcium, phosphorus, magnesium, silicon, manganese, sulphur, selenium and iron.



Figure 1 Bee pollen



Figure 2 Bee with pollen

It is very easily absorbed and utilised by the body and is extremely alkalising, which is great for general health.

The benefits of taking this super food are extensive. It is anti-ageing as it stimulates cell growth and repair, and has anti-cancer properties with studies showing that it can reduce tumours.

It protects against radiation and helps with the side effects of chemotherapy, and is well known for increasing longevity, improving fertility, stimulating the ovaries and improving libido! Honey bee pollen is a potent medicinal and nutritional substance.

Medicinally it is anti fungal, antiviral, antibiotic, antiallergic, antimicrobial, anti-inflammatory, hepatoprotective, anticancer, immuno-stimulating, local anesthetic and modulates the burn wound healing process.

The chemical composition varies by plant source, geographic location, climate, and soil, to name a few. There are about 250 substances that make up bee pollen including 24.1% proteins, 10.4% amino acids, 18.5% carbohydrates, acids (linoleic, γ -linoleic and arachidonic, with phospholipids, phytosterols, especially P-sitosterol), lipids (EFAs), fatty acids, vitamins (provitamin A and vitamins E and D, and water-soluble vitamins such as B1, B2, B6, and C, and acids: pantothenic, nicotinic and folic, biotin, rutin, and inositol), macronutrients, bioelements - micronutrients, polyphenols - flavonoids (kaempferol, quercetin, and isorhamnetin), phenolic compounds (triterpene bonds, oleanolic acids, 3-ursolic acid, and betulin alcohol, enzymes, coenzymes.

Nutritional benefits of consuming bee pollen

Clinical studies confirmed the hypolipidemic activity of pollen which lowered the level of lipids and cholesterol, decreased the clumping of blood platelets, lowered the level of cholesterol in blood serum, increased the field of view, and stabilized the visual acuity. Moreover, small doses of pollen given to older people allowed both the inhibition of the atherosclerotic changes of blood vessels and improvement of cerebral blood flow.

The hypoglycemic activity of pollen causes a decreased ability of platelet aggregation and increased fibrinolytic system activity which indicates the anti-atherosclerotic effect giving protection from heart diseases and brain strokes.

The detoxifying activity of pollen and bee bread from occupational diseases, heavy metal contamination, industrial gases & dusts, and drugs (e.g., anti-rheumatic and anti-inflammatory preparations and antibiotics) should also be mentioned.

Because of its anti-inflammatory properties pollen is recommended in acute and chronic inflammatory conditions, initial degenerative conditions, and cholestatic liver diseases as well as in toxic and post traumatic damages of the liver.

Better health with the use of bee pollen

As a dietary supplement, pollen contributes to a higher vitamin C and magnesium content in the thymus, heart muscle, and skeletal muscles as well as higher hemoglobin content and a greater number of red blood cells. It has been shown to regulate metabolic processes which in turn help with developmental delays, malnutrition and surgical recovery.

Furthermore, the adaptogenic properties of pollen increase the resistance to harmful physical, chemical, and biological factors. It both increases the physical fitness when under excessive physical burden, while

also improving brain functions, such as memory, learning, comprehending, thinking, and ability to concentrate, while simultaneously boosting the immune system against infection.

Pollen, taken with antidepressants, enables the lowering of doses and improves the overall condition in a shorter period of time. Due to this fact, there are fewer cases of drug addictions or occurrences of side effects. Owing to its nutritional and tonic properties as well as improvement of blood supply to nerve tissue, pollen boosts mental capacity and strengthens the nervous system weakened by stress or overwork. Therefore, pollen is effective in treating physical and mental over-tiredness, asthenia, and apathy.

Particularly good effects are gained in depression caused by decreased life energy, especially in older people. Long-term use of pollen, even in small doses, enables gradual mood improvement, restores the desire to live, and strengthens the organism physically.

Fresh, bee collected pollen contains about 20-30 g water per 100 g. This high humidity is an ideal culture medium for micro-organisms like bacteria and yeast. For prevention of spoilage and for preservation of a maximum quality the pollen has to be harvested daily and immediately placed in a freezer. After two days of storage in the freezer, the pest insects will be killed. After thawing pollen can be kept only for a few hours and should be further processed as soon as possible. Fresh pollen is high in moisture and protein and, especially when brought into the hive—which stays around an internal temperature of 37°C—becomes an ideal environment for mould growth. The bees' digestive fluids, however, are rich with lactic acid bacteria (LAB) which come to dominate the pollen substrate when it is packed together and sealed from the air with honey. The bacteria metabolise sugars in the pollen, producing lactic acid and lowering the pH from 6.3 to around 4.3 well below the generally recognised threshold for pathogenic microbial growth of 4.6.

Using: 2 tea spoons daily (approx. 10 g); children: half dose.

Warning: It is recommended that people who are susceptible to allergies or asthma should avoid intake of bee pollen.

Storage: store in the dark in a cool dry place

Best before (valid after packaging of product)

Dried pollen stored at room temperature: 12 months

Dried pollen packed in vacuum: 24 months

Frozen fresh pollen stored in the freezer: 12 months

But the bees do not consume their pollen fresh. Instead, they take it into the hive and pack the granules into empty comb cells, mixing them with nectar and digestive fluids and sealing the cell with a drop of honey. Once processed in this way, the pollen remains stable indefinitely. Beekeepers call this form of pollen 'perga' or 'bee bread'. In addition to preservation the fermentation process of the pollen also renders its nutrients more available. Some proteins are broken down into amino acids, starches are metabolised into simple sugars, and vitamins become more bio-available, and. In this sense, bee bread is even more health-giving than the more commonly available fresh bee pollen.



Figure 3 Frozen bee pollen, a human food supplement.



Figure 4 Bee bread in honeycomb cells

What we know about bee bread (perga) today (Ambrosia – the food of gods)

Bee bread represents an indispensable addition to daily diet, abundant in high-quality proteins, all essential amino acids, carbohydrates, fatty acids, B vitamins, vitamins K, E, D, C, especially in vitamin P (Rutin), provitamin A (Carotene), various minerals and oligoelements (especially potassium and iron), essential oils, enzymes, pigments, and other biologically active natural substances. As a result of the perfect balance between flora and fauna, bee bread is the only known natural food containing all the essential nutrients that a perfectly healthy human body requires. No product, synthesized either naturally or artificially, has so pronounced biological activity. It should be pointed out that, so far, nobody has managed to make authentic bee bread with so many microorganisms. In fact, it is possible to make some kind of a mixture that contains all the ingredients of a genuine bee bread using baking yeast, soy flour, powdered milk, fresh eggs, etc., but such a mixture does not contain what is essential to bee bread—numerous microorganisms. Even if one managed to provide all those microorganisms in artificial bee bread, they would face an insoluble problem—in what order to add those microorganisms. It will remain a mystery for a long time, the mystery which only bees can solve—the order of “packaging” and processing of bee bread as well as the method of adding those microorganisms. Hardly will anyone get the recipe from the bees. For all of the aforementioned reasons, bee bread will remain an outstanding, remarkable and unique bee product for a long time.



Figure 5 Bee bread in honeycomb cells



Figure 6 Bee bread out of a honeycomb

It is very hard to obtain this bee product as bees produce it in limited amounts. Due to its composition, it is impossible to “counterfeit” bee bread, i.e. synthesize it artificially. Therefore, it is a unique and unparalleled bee product. Bees place processed pollen in honeycomb cells (up to about 2/3 of them), whereas the rest of the cells is filled with honey. During processing pollen, bees use over 200 microorganisms, initiating a very complex process of pollen fermentation. Bee bread (perga) is, unlike collected pollen, a ready meal for bees and excellent food for humans at the same time. It contains over one hundred species of fungi, over eighty yeast types, over forty species of bacteria, as well as everything that is found in collected pollen from flowers: proteins, vitamins and minerals. The use of bee products is extremely important in the nutrition of children and athletes because it improves the psychophysical state of the human body, especially when physical effort is increased. Apart from this, the polyvitamin properties of this product also have a therapeutic effect. It has been scientifically proved that the consumption of fermented pollen (bee bread) and honey results in the rapid increase of blood haemoglobin (without any harmful effects) and the strengthening of blood vessel walls and the regulation of their permeability. It also regulates hypertension and arteriosclerosis, as well as establishes the balance between good and bad cholesterol. No other natural product than bee bread contains extremely high concentrations of vitamin P (Rutin) (13mg per 100g of bee bread), which has a special significance for improving the condition of blood vessels. Moreover, bee bread boosts the immune system and contributes to the reduction of fatigue. It is used in the treatment of colitis, chronic constipation, hepatitis and other liver function disorders, chronic inflammation of the prostate, as well as male sterility and impotence. In addition, traditional Chinese medicine uses bee bread to activate weakened ligaments of the eye, prevent bleeding in the eye retina, and for the treatment of damaged skin resulting from the use of radiotherapy. Bee bread is known to have a strong antiseptic effect on a wide range of pathogenic

microorganisms. Its use is also recommended in memory disorders (especially in the elderly), cerebral cortex inflammation and nervous and psychiatric disorders. It is used in heart disorders, gastritis, endocrine glands disorders, duodenal ulcer, decreased libido, various allergies, or after catching a cold or the influenza. Bee bread contributes to the regeneration of intestinal flora damaged by the use of medicines and it allows going on safe weight-loss diets, without the danger of running into essential substance deficiencies in the body. It improves intra-uterine nutrition without harmful effects on the fetus and also helps it to gain weight and increase the levels of haemoglobin, total protein, serum iron, and albumins. Some experiments have shown that animals which had bee bread added to their diet eat 15 to 20 per cent less than they normally do, but they continue to develop in the same manner, while the quality of their meat improves. This suggests that it is possible for humans to go on a weight-loss diet with the use of bee bread without fear of side effects while, at the same time, their health condition would improve. Bee bread abounds in high-quality proteins, all essential amino acids, carbohydrates, fatty acids, vitamins (B1, B2, B3, B5, B6, B7, B8, B10, B11, B12, E, D, K, C, F, and P), etc. Vitamin K provides good blood clotting, is a blood coagulation factor and prevents internal bleeding. Vitamin C represents a wide range catalyst, an antioxidant and it stimulates the heart and blood vessels. It also improves the resistance of the body to infectious diseases. Moreover, it activates many enzymes, lowers cholesterol levels and eliminates fatigue. Vitamin P (Rutin) is an active element found only in bee bread at such a high concentration – 13 mg per 100 g of bee bread – and in no other natural product. It strengthens the walls of blood vessels, regulates their permeability as well as makes the walls of capillaries tighter. Today, this active substance is also known as the vitamin of youth.

Minerals

It is known that Ca and P together affect the formation and preservation of healthy teeth and bones, but they are also very important for defending the body against stress and allergies. Ca (calcium) and Mg (magnesium) regulate the metabolism of carbohydrates. Fe (iron) and Co (cobalt) help in the formation of red blood cells. J (iodine) and Mn (manganese) are necessary for the normal functioning of the thyroid gland, proper growth and muscle reflexes. Zn (zinc) is necessary for the synthesis of proteins and vital DNA, which is the basic structural component of the nucleus of every cell. Furthermore, it is very important for the cell division and the exchange of gases in the lungs. Se (selenium) prevents the aging of cells, enhances the vitality and resistance of the body, has got antioxidant properties, neutralizes certain carcinogenic cells and protects the body from them.

Fifty enzymes have been found in bee bread so far: catalase, amylase, diastase, invertase, phosphatase, ribonuclease, peroxidase. What distinguishes bee bread from pollen is the existence of free amino acids. Free amino acids are the basic components of body albumins and they are very important for the division and formation of cells. This is why the use of bee bread is very important for all growth processes as additional food, both for growing children's nutrition and for adults in recovery after long and severe illness.



Figure 7 Depositing pollen



Figure 8 Bee bread for use

Bee bread is more acidic than bee pollen

	Bee pollen	Bee bread
Proteins	24.1	20.3-21.7
lipids	3.3	0.67-1.58
carbohydrates	18.5	24.4-34.8
Lactic acid	0.65	3.06-3.2
minerals	2.55	2.43
pH	6.3	4.3

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Bee bread pH 4.3, well below the generally recognized threshold for pathogenic microbial growth of 4.6.

Why is bee bread superior to bee pollen?

- ☞ 37 fatty acids were determined in a study, (As it was shown in a 2016 study by Kaplan M et al.,)
- ☞ Unsaturated to saturated fatty acids ratio ranged between 1.38 and 2.39, indicating that bee bread can be a good source of unsaturated fatty acids.
- ☞ A high amount of the healthy n-3 fatty acids was found.
- ☞ The ratio of polyunsaturated fatty acids n-3 to n-6 reached a value of 8.42 and 3.35 in the latter products.
- ☞ Bee bread can be a good source of unsaturated fatty acids.
- ☞ Compared to frozen pollen or dried pollen and due to the fermentation process, bee bread has almost an unlimited guarantee.

How to use

Bee bread is used in two ways. The first one is the use of bee bread in the original form of granules, by dissolving a few granules in the mouth for as long as possible.

It is best to use bee bread half an hour before a meal, by dissolving the granules in the mouth for as long as possible. This way, useful substances are absorbed even in the mucous membranes of the mouth.

Another way is the use of bee bread in honey in such a way that 60 g of crumbled bee bread is mixed with 1 kg of honey.



Figure 9 Bee bread in its original form



Figure 10 Bee bread in honey

The mixture with honey is used: (a) for adults, 1 teaspoon 2-3 times a day; (b) for children aged 2-4 years: 1/3 of a teaspoon 2-3 times a day; (c) for children aged 4-12 years: 1/2 of a teaspoon 2-3 times a day.

It can be used once a day (in the morning) or twice a day (in the morning and in the evening), half an hour before a meal, by slowly dissolving bee bread in the mouth, without the use of water. After the intake of bee bread, one should avoid consuming beverages for at least another thirty minutes.

Due to its outstanding quality and diverse composition, bee bread is an irreplaceable supplement to the daily diet. The use of bee bread is very significant for nutrition from early youth to old age – it improves the psychophysical state of the human body, especially when physical effort is increased. Apart from this, the polyvitamin properties of this product also have a therapeutic effect.

Man is created and born to live to the fullest, be healthy and happy. Take the perfection of nature and bees into your body.

Conclusion

Bee bread is an irreplaceable supplement to the daily diet; it is rich in high-quality protein, all essential amino acids, carbohydrates, fatty acids, vitamins, various minerals and oligoelements (especially potassium and iron), essential oils, enzymes, pigments and other biologically active natural substances.

As a result of the perfect balance in nature,

bee bread is the only known natural food containing all the essential nutrients that a perfectly healthy human body requires.

Bee bread will remain an outstanding, remarkable and unique bee product for a long time.

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