Four Excellent Articles on: Bee Pollen

About Bee Pollen

by Steve Schecter, N.D.

Bee pollen is the male seed of a flower blossom which has been gathered by the bees and to which special elements from the bees has been added. The honeybee collects pollen and mixes it with its own digestive enzymes. One pollen granule contains from one hundred thousand to five million pollen spores each capable of reproducing its entire species.

Bee pollen is often referred to as nature's most complete food. Human consumption of bee pollen is praised in the Bible, other religious books, and ancient Chinese and Egyptian texts. It has long been prescribed by traditional health practitioners – including the fathers of Western medicine Hippocrates, Pliny the Elder, and Pythagoras – for its healing properties.

More than 40 research studies document the therapeutic efficacy and safety of bee pollen. Clinical tests show that orally ingested bee pollen particles are rapidly and easily absorbed–they pass directly from the stomach into the blood stream. Within two hours after ingestion, bee pollen is found in the blood, in cerebral spinal fluids, and in the urine.

Bee pollen rejuvenates your body, stimulates organs and glands, enhances vitality, and brings about a longer life span. Bee pollen's ability to consistently and noticeably increase energy levels makes it a favorite substance among many world class athletes and those interested in sustaining and enhancing quality performance.

Bee pollen contains most of the known nutrients, including all of those necessary for human survival. When compared to any other food, it contains a higher percentage of all necessary nutrients. Bee pollen is approximately 25% complete protein containing at least 18 amino acids. In addition, bee pollen provides more than a dozen vitamins, 28 minerals, 11 enzymes or co-enzymes, 14 beneficial fatty acids, 11 carbohydrates, and is rich in minerals, the full spectrum of vitamins, and hormones. It is low in calories.

Several nutrients in bee pollen, such as proteins, beneficial fats, vitamins B, C, D, E, and beta-carotene, calcium, magnesium, selenium, nucleic

acids, lecithin, and cysteine, are scientifically well documented for their ability to strengthen immunity, counteract the effects of radiation and chemical toxins (which are the two most severe stressors to your immune system), and generate optimal health and vitality.

Bee pollen provides anti-oxidants that scavenge free radicals caused by exposure to radiation, chemical pollutants, and other intense physical or emotional stressors. Radiation and chemical pollutants are known as the two most severe stressors to your immune system. According to the Centers for Disease Control and the Environmental Protection Agency, the two premier health monitoring organizations in the world, this year you will be exposed to over 200 different forms of radioactive toxins and over 60,000 different chemical toxins.

Toxins by definition stress your immune system, harm other parts of your body, and cause a wide range of common health problems. All forms of radiation, and most chemical pollutants, also produce cumulative side-effects. Any substance that effectively protects your body from the side-effects of exposure to radiation or chemical pollutants is considered a strong immune stimulant and generator of health.

Exposure to radiation and/or chemical pollutants adversely decreases a number of vital body substances. These include antibodies and other white blood cells (your immune response), red blood cells, and nutrients in blood and mother's milk, such as protein and the antioxidant vitamins C and E.

Bee pollen is documented to counteract the effects that radiation and chemical pollutants have on these important barometers of health. Equally

important, bee pollen has been proven clinically to generate health.1)

Bee pollen significantly reduced the usual side-effects of both radium and cobalt-60 radiotherapy in twenty-five women who had been treated for inoperable uterine cancer. 2)

The women who took the pollen were considerably healthier and had stronger immunological responses. These women registered beneficial increases in a number of areas, including red and white blood cell counts and serum protein levels. The women also reported feeling an improved sense of well-being. Bee pollen proved beneficial for nausea, poor appetite after radiation treatments, sleep disorders, urinary and rectal disorders, and for general decline and weakness after treatment. The dosage of bee pollen received by these women was twenty grams, which is about 70% of an ounce, or approximately two teaspoons, taken three times per day.

X-rays, radiation, and many environmental pollutants break down some of your body's proteins, thus producing histamine, which then causes several allergic responses. Various laboratory analyses, and the patients' subjective reports, confirmed that bee pollen counteracted these responses, including weakened immune system and sickness.3)

Researchers found that bee pollen strengthened the immune systems of mice, improved their resistance to x-rays, and has antibacterial and antiviral properties. Bee pollen prevented the development of cancerous tumors in mice.4)

Bee pollen proves to be quite useful for activity enhancement and sports

nutrition. It produces an accelerated rate of recovery, including a return to normal heart rate, breathing, and readiness for the next event. Bee pollen improves second and subsequent performances. Humans not receiving bee pollen show declining performances. It provides energy, stamina, and strength, and enhances performance levels.

Bee pollen should not be confused with the pollen that is blown by the wind and is a common cause of allergies. Allergy-causing pollen is called anemophiles; it is light and easily blown by the wind. Bee pollen is heavier and stickier – "and is collected off bees' legs" by special devices placed at the entrance to hives. It is called entomophiles or "friends of the insects," and will rarely cause allergy symptoms.

Many people with allergies and hay fever safely and effectively ingest bee pollen. 73% of patients with hay fever averaged a 75% improvement when given bee pollen orally. 78% of asthma patients averaged a 75% improvement in taking bee pollen orally. 17.8% of hay fever patients and 33.3% of asthma patients showed a complete, 100%, improvement with oral bee pollen-usually the sooner bee pollen treatment began pre-seasonally the greater the rate of healing.5,6,7,8)

Quercetin in bee pollen inhibits the release of histamine in the body. It may be one of the contributing factors in decreasing allergic and hay fever responses.9,10,11,12)

Bee pollen improves fertility. It can reduce cholesterol levels. Bee pollen improved the condition of men with prostatitis. It produced therapeutic benefits in patients with glycohaemia (abnormal amount of blood sugar), low hemoglobin, and bleeding ulcers.

Bee pollen, royal jelly, and vitamin C were given to menopausal women for 30 days, after which 82% were symptom-free. Patients with kidney insufficiency were fed bee pollen and showed great improvement. Bee pollen promotes healing of a wide variety of other health problems.

Regarding safety, I have observed that a small percent of people who initially ingest large amounts may occasionally experience minor gastrointestinal irritation and a laxative effect or a rare allergic reaction.

One 1983 research study corroborates my clinical experience. It is unclear whether this effect is due to the person being very sensitive; or due to poor quality pollen such as gathered from commercially-sprayed flowers; or improperly cleaned, dried, or stored pollen which therefore may contain debris or mold-causing moisture. I have also clinically observed that large amounts of bee pollen may be contraindicated for some people with gout as it may elevate purine or uric acid levels.

For preventive purposes, a common initial adult dosage of bee pollen granules is initially 1/8 to 1/4 teaspoon once per day. The dosage is gradually increased to 1-2 teaspoons one to three times per day. Adults suffering from allergies are best advised to start off with one to three granules daily, and then to gradually increase to higher doses-usually over a period of one month or more. Pollen is also available in gelatin caps, tablets, mixed with other bee products, as a liquid, tincture, cream, and salve. For preventive purposes, the suggested amount is two 450-580 mg. capsules three to four times daily. A short term, therapeutic amount of bee pollen is about three times the preventive amount. Bee pollen should not be cooked.

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The Buzz on Bee Products

by Frances Albrecht, M.S., C.N.

Ponce de León, the Spanish explorer, might have been wiser to search for a beehive than for a fountain of youth in his quest for longevity. The queen bee of a honeybee hive can live up to five years, whereas worker bees live an average of 40 days. What accounts for her majesty's long life? Bee product enthusiasts believe it's her diet of royal jelly, a nutritious, white, milky substance produced in the glands of worker bees, that keeps the queen humming for so many years. These enthusiasts contend that consuming royal jelly may enhance human longevity as well.

Royal jelly isn't the only treasure from the honeybee hive that might contribute to human health. Honey, propolis and bee pollen have been shown to boost the human immune system and to help ward off allergies, illnesses and even cancer and heart disease. As bee products can cause

health problems in people sensitive to bee stings, visit your health care professional before using them.

Worker bees make honey from nectar sipped from the hearts of flowers. To produce a pound of honey, bees have to make about 37,000 trips to the fields collecting flower nectar and pollen. In the hive, the liquid nectar is dried and stored in honeycombs that are then sealed with wax. Inside the sealed comb the honey ripens and can last for many years.

Honey contains up to 80 different substances including vitamins, trace minerals and live enzymes. Honey fanciers revere raw over commercially strained honey, which can lose from 33 to 50 percent of its vitamin content through the preparation process. Bakers often prefer using honey over sugar in breads and sweets because the honey helps these foods stay moist and fresh for longer periods of time.

Raw honey may also speed the healing of infected wounds and burns, and it appears to have antibacterial, antiallergenic and anti-inflammatory properties. In one study, 58 people with wounds that resisted antibiotics for more than two years experienced healing after one week of topical honey application. Researchers believe it may be the honey's acidity, drying power or a bacteria-killing ingredient called inhibine that helped heal the sores [British Journal of Surgery, July 1988, as cited in Health from the Hive (Keats) by Carlson Wade].

Bee propolis, also called bee glue, is made from tree propolis, a sticky resin that seeps from the buds and bark of certain trees. Bees gather propolis and blend it with wax flakes secreted from glands in their abdomens. Bees sterilize their hive by coating it with propolis. Its natural

antiseptic qualities ensure a clean environment for healthy brood rearing.

Shown to possess antibacterial and antifungal properties, propolis has been used as a natural antibiotic. One component of honeybee propolis, caffeic acid phenethyl ester (CAPE), is known for its anticancer, anti-inflammatory and immune-modulating properties (Proceedings of the National Academy of Science, USA, Aug. 1996). Although the molecular basis for these properties isn't known, propolis has been used to stimulate immune responses, soothe allergies, and reduce susceptibility to colds and flu.

Studies by Polish researchers showed that besides fighting bacteria and fungi, propolis stimulates some enzyme actions, inhibits the growth of protozoa, accelerates bone formation and regenerates tissue [Arzneimittel-Forschung, 1980, vol. 30, as cited in The Honest Herbal (Pharmaceutical Products Press) by Varro E. Tyler, Ph.D.].

Royal Jelly: Full of Nutrients

Royal jelly is a thick, milky-white substance made from bee pollen in the bodies of nurse bees who care for the brood's eggs. It offers an abundance of B vitamins as well as vitamins A, C and E. It also contains 20 amino acids, fatty acids, potassium, calcium, zinc, iron, manganese and acetylcholine. This milky substance also contains gamma-globulin, an immune-stimulating substance.

According to a recent review article, royal jelly could be used to fight atherosclerosis — the deposition of fat in arteries. In animal studies, royal jelly decreased blood serum lipid and cholesterol levels. In addition, it retarded the formation of fatty arterial deposits in the aortas of animals fed

a high-fat diet. The same article also reviews controlled human trials using royal jelly to reduce hyperlipidemia and reports a significant reduction in total blood serum lipids and cholesterol levels and normalization of high-density lipoprotein (HDL) and low-density lipoprotein (LDL) levels (Experientia, 1995, vol. 51).

Studies in humans also indicate doses of royal jelly (50 to 100 mg. per day) decreased total serum cholesterol levels by about 14 percent and total serum lipids by about 10 percent. “It’s believed royal jelly decreases resorption of cholesterol in the gastrointestinal tract and increases its excretion in the bile so that less cholesterol and other fat is available in the circulation,” say the authors, adding that royal jelly may also suppress the synthesis of cholesterol in the liver (Experientia, 1995, vol. 51).

Bee Pollen and Congress

Known for its reputed anti-allergy effects, bee pollen has made a believer out of at least one U.S. Senator. Tom Harkin (D-Iowa) credits a bee pollen and herb product for curing his seasonal allergies. Plagued by airborne allergens, the senator was persuaded by former Iowa Representative Berkley Bedell (who says alternative remedies cured him of Lyme disease, prostate cancer and allergies) to try an anti-allergy bee pollen regime. Harkin proclaims his allergies were cured, and takes bee pollen and herbs daily when symptoms occur (USA Today, July 22, 1993).

As a result of his success with this natural therapy, Harkin became a leading force in establishing the Office of Alternative Medicine (OAM). Funded in 1992 by the National Institutes of Health, the OAM was instituted to investigate and validate therapies most doctors ignore such

as the therapeutic uses of bee pollen and shark cartilage.

Bee pollen contains all 22 known amino acids and all 28 minerals found in the human body. It's a particularly good source of the B-complex vitamins. It's been praised as effective in the treatment of conditions as diverse as low blood pressure, arteriosclerosis and mental fatigue, writes Carlson Wade in Health From the Hive (Keats).

Frances Albrecht, M.S., C.N., is a nutrition counselor and a distance learning instructor at Bastyr University. This story is produced by Bastyr University in Seattle, Wash., which offers a program in naturopathic medicine (N.D.); bachelor's degrees in the natural health sciences; and master's degrees in nutrition, acupuncture and Oriental medicine. For information, contact Bastyr University, 14500 Juanita Drive NE, Bothell, WA 98011; 206-823-1300.

What's the Buzz: Medicine from the Beehive

by C. Leigh Broadhurst, PhD

In ancient times raw honey was as valuable on the battlefield as it was on the dinner table. In fact, all bee products — bee pollen, honey, propolis and royal jelly — were essential medications for many ailments. Although the beehive's millennial track record is enough to satisfy some, skeptics might be interested in how science confirms ancient wisdom.

Bee Pollen is flower pollen collected by honeybees from a variety of plants and is the insect's primary food source. Pollen grains, which are flowers' male reproductive cells, contain concentrations of phytochemicals and nutrients. Bee pollen is rich in carotenoids, flavonoids and phytosterols.1

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Studies show promising results regarding pollen's potential. In a placebo-controlled, double-blind clinical trial of 60 men, researchers from the University Hospital of Wales, Cardiff, found pollen extract was an effective treatment for prostate enlargement and prostatitis.2 In another study, mice with lung cancer survived almost twice as long when treated with pollen extracts compared with untreated controls. Pollen increased the effectiveness of chemotherapy when given simultaneously. Unlike chemotherapy, pollen didn't attack tumors but stimulated immunity.3

In a third study, rats were exposed to solvent vapors, simulating industrial

exposure. This elevated their liver enzymes, indicating diminished detoxification capabilities. Liver damage was significant in the control rats, damage that was nearly prevented in rats given pollen.4

Honey is a by-product of bees concentrating plant nectars. It is mainly food for bees, bears and humans. The characteristic flowery taste of raw honey comes from the pollen it contains. Honey's ability to heal wounds and treat infections is quite notable. It also is known for its antioxidant, antibiotic and antiviral capabilities.

Honey is 18 to 20 percent water and is comprised of glucose and fructose; vitamins A, B-complex, C, D, E, K and beta-carotene, as well as minerals and enzymes. Raw, unprocessed honey has the most medicinal and nutritional value.

In a study of 104 patients with first-degree burns, researchers in Maharashtra, India, compared honey's effectiveness to gauze soaked in silver sulfadiazine (SS), the conventional treatment. After seven days, 91 percent of honey-treated burns were infection-free compared with 7 percent of those treated with SS. After 15 days, 87 percent of honey-treated burns were healed compared with 10 percent of the SS-treated burns. The raw wildflower honey formed a flexible protective barrier which prevented infection, absorbed pus, and reduced pain, irritation and odor.5

Researchers in Sanaa, Yemen, treated 50 patients with wound infections following cesarean section or hysterectomy twice daily with either raw wildflower honey or a standard antiseptic solution of alcohol and iodine (AI). The 26 treated with honey were infection-free after six days compared with 15 days for the 24 treated with AI. Furthermore, 84 percent

of honey patients healed cleanly compared with 50 percent of AI patients. Honey treatment reduced the average postoperative scar width by nearly two-thirds, and hospitalization duration by half.6

Four mechanisms are proposed for honey's healing properties:

1. Honey is mostly glucose and fructose. These sugars are strongly attracted to water, forming a viscous syrup. When spread on a wound, honey absorbs water and body fluids, thus drying out bacteria and fungi and inhibiting their growth.7

2. Raw honey contains glucose oxidase, an enzyme that, in the presence of a little water, produces hydrogen peroxide, a mild antiseptic. Glucose oxidase is destroyed by bright light, heat and pasteurization, so it is absent from most commercial honeys.7

3. Raw honey contains bee pollen, enzymes and propolis, all of which can stimulate new tissue growth.7

4. Honey can contain additional medicinal compounds, including essential oils, flavonoids, terpenes and polyphenols, depending on the plant from which the pollen was taken.7

In a laboratory study of 345 unpasteurized honey samples, the majority exhibited antibacterial action against Staphylococcus aureus, which can cause food poisoning. When honey's natural hydrogen peroxide effects were removed, only honey from Manuka (Leptospermum scoparium) and

Viper's bugloss (Echium vulgare) were still active.8 New Zealand's dark, aromatic Manuka honey also inhibited Helicobacter pylori, the bacteria that can cause ulcers.9 In general, stronger, darker honeys, such as buckwheat, sagebrush and tupelo, have greater antimicrobial and antioxidant activity–enough to act as food preservatives.10

Propolis consists mainly of specific tree resins collected by honeybees. Bees use propolis like putty to seal cracks and openings in the hive, strengthen combs and seal brood cells. Propolis also helps sterilize the hive–the resins protect both trees and bees from infections.11 Most research has been conducted predominantly on poplars, but beech, birch, chestnut and several conifer species have also been studied.12

More than 180 compounds have been identified in propolis, and many are biologically active.11 Flavonoids are abundant, including many that are anti-inflammatory, antiallergenic, antioxidant and/or antimutagenic and antispasmodic.13 Propolis is uniquely rich in properties which have been shown to inhibit cancer growth in animal studies14 and reduce inflammation as effectively as drugs.15

Propolis also contains organic acids and their derivatives. These constituents contribute antibiotic, antifungal and antiviral effects.11,13,16-18

In cultures, propolis inhibits the growth of various viruses and fungi including herpes, influenza, rota, candida and aspergillus.16,19,20 Many bacteria are also affected, including Clostridium spp., Escherichia coli, Staphylococcus spp. and Streptococcus spp. Propolis is active against bacteria isolated from people with upper respiratory infections, including

penicillin-resistant strains.21

Propolis promotes pharmaceutical antibiotics, including streptomycin, penicillin, neomycin and tetracycline; the combined products act synergistically.21 Propolis can be taken in conjunction with prescribed medications but not in place of them.

Propolis is also a superior ingredient in wound salves and may help heal stomach ulcers. One tablespoon raw honey with propolis three times daily during an ulcer flare-up can be helpful. In addition to being antimicrobial, propolis is anti-inflammatory and detoxifying, and it stimulates new tissue growth.18

Royal Jelly is a thick, creamy fluid synthesized in nurse bees' bodies during digestion of bee pollen and secreted from glands in their heads. All larvae are fed royal jelly for three days, but the queen bee eats royal jelly exclusively, which makes her fertile and able to live for five to seven years. In contrast, worker bees are sterile and live just seven to eight weeks. Royal jelly has a reputation for maintaining youthfulness in humans, but research, while encouraging, lags behind that for other hive products.

Fresh royal jelly is 2.0 to 6.4 percent trans-10-hydroxy delta-2-decanoic acid (HDA) by weight.22 HDA is a monounsaturated fatty acid with a hydroxyl group. Hydroxy fatty acids protect skin from dehydration, and some are strongly anti-inflammatory. HDA may also be anti-inflammatory.23 Royal jelly also contains collagen; lecithin; and vitamins A, C, D and E–all of which benefit the skin.24 Concentrated royal jelly moisturizes dry skin and soothes dermatitis.18,25 Additionally, royal jelly

contains all the B vitamins and several other compounds that help lower cholesterol. A review of controlled studies concluded that in humans, 50 to 100 mg royal jelly per day decreased total cholesterol by 14 percent and triglycerides by 10 percent.26 Royal jelly at a dose of 15 mg/kg body weight also slowed the development of atherosclerosis in rabbits fed high-fat diets.17

In 1999 researchers at the USDA/University of Arizona in Tucson discovered genes that respond to a 24-hour royal jelly diet–the process that turns ordinary bee larva into queen bees. At Northern Ohio University in Ada, rats fed only raw bee pollen granules were healthier and leaner than those fed standard rat chow. Clearly, there's something to that millennial track record.

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C. Leigh Broadhurst, Ph.D., heads 22nd Century Nutrition, a nutrition/scientific consulting firm, and is a visiting scientist at a government nutrition research laboratory.

Bee Pollen Facts

by Frances Albrecht, M.S., C.N.

• Bee pollen enhances the metabolism by creating endless chain reactions throughout the entire system. The essential minerals and other natural elements in bee pollen act as catalysts, and are responsible for the assimilation of that portion of foods which would normally have been eliminated without yielding the energy, essential nutrients and other benefits (which usually occurs on a regular basis with most adulterated foods).

• Bee Pollen is one of the richest natural foods ever discovered, and the incredible nutritional and medicinal value of pollen has been known for thousands of years.

• Bee pollen grains contain the male germ cells that are produced by all flowering plant species. It plays an essential role in the fertilization and propagation of these plants.

• One teaspoonful of bee pollen contains approximately 1,200 pellets or 2.5 billion grains, each of which has the capacity to supply those factors that are necessary in order to fertilize and reproduce the particular plant species that it represents (such as a fruit, grain, flower, or tree). Pollen is composed of myriads of microspores that are produced in the anthers of flowers and in the cones of conifers. Each grain measures approximately .002 inches in diameter and each bee-collected pellet contains approximately two million grains of pollen.

• Bees are extremely discriminate about selecting the best pollen from the

millions of grains that are present. Of these, only two types are found, namely, anemophile pollen grains (which are not collected by bees, and produce allergic reactions) and entomophile pollen grains (which are collected by bees, and possess greater nutrient content). It is apparent that the bees only select those grains of pollen that are rich in all the nutrients, especially nitrogenous materials. The bees mix the pollen grains with a sticky substance that is secreted from their stomachs, which allows the pollen to adhere to their rear legs in “pollen baskets” in order to safely transport it to their hives.

• Bee pollen contains the richest known source of vitamins, minerals, proteins, amino acids, hormones, enzymes and fats, as well as significant quantities of natural antibiotics. Most of the known vitamins in pollen exist in perfect proportion, which further enhances their value.

• The protein content of bee pollen (including certain peptones and gloculins) ranges from 10 to 35 percent (according to its plant origin). Forty to fifty percent of this may be in the form of free amino acids. All pollens contain the exact same number of 22 amino acids, yet different species produce varying amounts. The amino acids found in whole dry pollen fluctuate between 10 and 13 percent (26.88% protein or albuminous substances). This equals from 5 to 7 times the amino acid content found in equal weights of beef, milk, eggs or cheese.

• Bee pollen contains from 10 to 15 percent natural sugars, including fructose, glucose, pentose, raffinose, stachyose and sucrose. These are essentially the same simple natural sugars that are found in honey, and which exist in easily-digested chains and bonds. Many are converted to a predigested form by the enzymatic action of the bee’s salivary glands.

• The highly-resistant exterior wall membranes of bee pollen are composed of sporonine and cellulose. Until recently, this complex carbohydrate was unextractable from pollen and was the major cause of low bioavailability and rare allergic reactions to bee pollen which some people experienced.

• Bee pollen also contains lecithin, amines, nuclein, guanine, xanthine, hypoxanthine, vernine, waxes, gums, resins, hydrocarbons (0.57%), sterols (0.6%), polypeptides, DNA, ribose, desoxyribose, hexuronic acid, vegetable oils (5% average) and various growth factors.

• Certain enzymes are also present in bee pollen, and are the essential biological catalysts during the digestive process (bee pollen also aids in the proper digestion of other foods). The enzymes found in bee pollen include amylase, catalase, cozymase, cytochrome, dehydrogenase, diaphorase, diastase, lactic acids, pectase and phosphatase.

• The water content of fresh bee pollen ranges from 3 to 20 percent. This water content must be carefully removed by proper dehydration methods (desiccation) in order to retain its fragile elements, as well as to preserve the total integrity of its properties.

• Bee pollen also contains active antibiotic substances that immediately destroy harmful pathogenic bacteria upon contact.

• Bee pollen usually contains nectar and saliva. When mixed with honey, this pollen may be stored in comb cells where it undergoes a lactic acid fermentation process in order to produce “bee bread” (which contains high levels of vitamin E and K).

• Bee pollen is superior to both honey and royal jelly, and possesses a similar (but more stable) composition to that of royal jelly. The overall stability of bee pollen is more advantageous when used in dietetics, as well as an effective form of skin care during corrective dermatology. Since pollen contains fatty acids, this may account for its favorable effect upon the skin and dermal tissues. The anti-fungal action in human perspiration is due to the presence of certain fatty acids such as caprylic, propionic and undecyclenic acids.

• Many of the active ingredients in bee pollen consist of substances (such as hormones) that accelerate plant growth.

• Experiments by French doctors have revealed that pollen contains both natural antibiotic properties and significant growth factors.

• Bee pollen provides those chemical substances from which are used to create glands, muscles, hair and vital organs. In addition, it also furnishes those essential materials that are necessary for the repair of any worn-out cells or tissues.