

Biological and therapeutic properties of Bee pollen

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Abstract

Introduction: Bee pollen is a natural honeybee product promoted as a valuable source of nourishing substances and energy. Bee pollen contains several nutrients and bioactive compounds: proteins, which are among the main components of Bee pollen, include enzymes and both essential and nonessential amino acids. In fact, Bee pollen is referred to as the “only perfectly complete food”, as it contains all the essential amino acids needed for the human organism. A large number of carbohydrates, lipids, sugars, fibers, vitamins and mineral salts are also found in this substance. The health-enhancing value of bee pollen is expected due to the wide range of secondary plant metabolites such as tocopherol, thiamine, biotin, polyphenols, carotenoid pigments, phytosterols. It has many beneficial effects such as antioxidant, anti-inflammatory, anti-carcinogenic, antibacterial, antifungal, hepatoprotective, anti-atherosclerotic and immune enhancing. So there are many therapeutic goals for Bee pollen.

Methods and Results: This article is based on different original articles on PubMed, and ScienceDirect data bases. Almost 50 articles have been studied that 20 of them were really useful in writing this abstract. Bee pollen has many beneficial effects like antioxidant, anti-inflammatory, anti-carcinogenic, antibacterial, antifungal, hepatoprotective, anti-atherosclerotic, anti-estrogenic and immune enhancing activity. It also can be used as a promising agent in the burn Wounds treatment.

Conclusions: Bee pollen as a natural honeybee product has a lot of biological and therapeutic effects. It is useful for treatment of many diseases. In principle, we can unequivocally recommend bee pollen as a valuable dietary supplement. Also, the bee-pollen components have potential bioactive and therapeutic properties. Extensive research is required before bee pollen can be used in therapy.

Key words: Bee pollen, Honeybee product, Nutritional effects, Biological activity, Pharmacological activity