

## Buzz-Worthy Foods : Honey & Bee Pollen

### 值得大力提倡的食品：蜂蜜和花粉

*Medical treatments through bee products, also known as 'apitherapy,' is a practice that goes as far back as 3,000 years in ancient China and the Middle East.<sup>1</sup>*

*These days, we tend to think of bee products as honey and beeswax, but they also include bee pollen, propolis and royal jelly. And many of these bee products have found their way into foods and health products found in the markets today. One of the main reasons for their popularity is health. Let's take a closer look at just two of the bee products—honey and bee pollen—and how they can enhance our health.*

在眾多的醫療方法中，有一種是以蜂類產品來為患者治療，它被稱作“蜂療”。早在3000年前的中國和中東，就已經有人在施行這種療法了。<sup>1</sup> 現在，一說起蜂類產品，我們想到的可能只有蜂蜜和蜂蠟，其實，蜂類產品還包括花粉、蜂膠和蜂王漿。在當今的消費品市場上，這些蜂類產品中的許多種類都被以不同的方式加進了食品和健康產品中。這些蜂類產品之所以能夠這樣流行，最重要的一個原因就是它們具有增進健康的補益作用。現在，讓我們走近這類產品中的兩種——蜂蜜和花粉，看看它們到底是怎樣有助於我們身體健康的。

## Honey

Honey is undoubtedly the most common bee product available to consumers today. Bees make honey from plant nectars in flowers to feed the colony. In other words, honey is what bees eat. Although most people use it as a natural sweetener to enhance the taste of food, honey also contains a plethora of nutrients. Dr. Susan Percival of the University of Florida's Department of Food Science and Human Nutrition found that honey contains:

- vitamins
  - thiamin,
  - vitamin B-6,
  - riboflavin,
  - pantothenic acid
- minerals
  - copper,
  - iron,
  - calcium,
  - manganese,
  - potassium,
  - zinc
- amino acids and
- antioxidants, including one—pinocembrin—that is found exclusively in honey.<sup>2</sup>

Raw, unprocessed honey possesses the highest nutritional qualities.<sup>3</sup>

According to researchers in India, honey also has antimicrobial and antiseptic properties that help treat patients with burn and surgical wound infections. Compared to conventional wound dressings, honey shows noticeable results in improved tissue formation, occurrence in secondary infection, and length of hospital stay.<sup>4</sup>

Dr. A. J. Zaat and colleagues of Academic Medical Center, Amsterdam, adds that honey's natural antibiotic properties effectively treat skin problems, burns and the effects of catheters and other skin-penetrating medical devices.<sup>5</sup> Zaat et al. further state that although there is an increasing development of antibiotic-resistant bacteria today, honey shows no signs of microbial resistance. Zaat's study establishes that antibiotic-susceptible and antibiotic-resistant isolates of several bacteria were killed within 24 hours after incubation with honey. Along this line, researchers from the University of Waikato, New Zealand, find honey's effect on *Helicobacter pylori*, a bacterium known to cause gastric ulcers, remarkable. Within three days of treatment using honey, the growth of *H. pylori* colonies ceased completely, thus suggesting honey as a powerful treatment for gastric ulcers.<sup>6</sup>

A study reported in the Archives of Pediatrics & Adolescent Medicine, December 3, 2008 issue, shows honey as effective in treating upper respiratory infections (URIs) in children. Lead author of the study, Ian M. Paul, MD, MSc, an associate professor of pediatrics and public health sciences at the College of Medicine, Pennsylvania State University, announced: "Honey has been cited by the World Health Organization as a treatment for cough and cold symptoms in children, and it is used for

## 蜂蜜

蜂蜜，無疑是消費者在當今市場上所最常見到的蜂類製品。蜜蜂以鮮花的花蜜釀造蜂蜜，用來喂養自己的族群，換句話說，蜂蜜就是蜜蜂的食物。儘管在日常生活中，大多數的人都是將蜂蜜當作天然的甜味劑，為食品提味，但蜂蜜中其實還蘊含著極其豐富的營養素，更是值得我們利用的。佛羅里達大學食品學和人類營養學院的Susan Percival博士發現，蜂蜜中含有：

- 多種維生素
  - 硫胺素
  - 維生素B-6
  - 核黃素
  - 泛酸
- 礦物質
  - 銅
  - 鐵
  - 鈣
  - 錳
  - 鉀
  - 鋅
- 氨基酸
- 一些具有類似抗氧化劑作用的混合物 - 其中有一種叫做松屬素的，為蜂蜜中專有。<sup>2</sup>

通常，未經加工過的原始蜂蜜所含的營養價值最高。<sup>3</sup>

印度的科研人員研究認為，蜂蜜還具有抗菌和防腐的特性，可以輔助治療病人燒傷處和手術傷口的炎症。根據對普通傷口敷藥的對比，在促進組織的愈合、治癒二度感染和縮短病患的醫院滯留時間方面，蜂蜜都顯示出令人矚目的效果。<sup>4</sup>

阿姆斯特丹學術醫學中心的A. J. Zaat博士和他的同事們也對蜂蜜的研究做出了補充，他們認為蜂蜜的天然抗菌性可以有效地治療一些皮膚問題和燒傷，對導尿管和其它醫療器械穿透皮膚所產生的負面影響也顯示出有效的療傷作用。<sup>5</sup> Zaat和他的同事進一步闡述，儘管當今的耐抗菌素細菌在不斷地增加，但是蜂蜜沒有顯示出被細菌耐抗的跡象。Zaat的研究結論是「在二十四小時內，從幾種細菌中被分離出的不耐抗菌素和耐抗菌素細菌，都會被蜂蜜殺死。」根據此綫索，新西蘭懷卡托大學的科研人員，又發現了蜂蜜對一種以引起胃潰瘍而知名的細菌 - 幽門螺桿菌，具有顯著的抑制效果，在連續三天使用蜂蜜之後，患部幽門螺桿菌的生長完全終止，因此他們建議將使用蜂蜜當作胃潰瘍的強效治療方法。<sup>6</sup>

一份於2008年12月3日發表在「兒科和青少年疾病醫學文獻」中的研究報告指出，蜂蜜在治療兒童上呼吸道感染 (URIs) 方面顯示出一定效果。此項報告的主筆，賓夕法尼亞州州立大學醫學院的兒科和公共健康學副教授Ian M. Paul MD, MSc宣稱：「蜂蜜曾被世界衛生組織引證為治療兒童

## PROTEIN

symptomatic relief for these illnesses by cultures all over the world.<sup>7</sup>

While over-the-counter cough and cold medications are not recommended by the FDA for children under the age of six, Dr. Paul's study maintains that honey continues to prove effective against URIs in children ages one and above without harmful side effects. Dr. Michael Dale Warren, from Vanderbilt University in Nashville, Tennessee, in response to Paul's study, includes: "There is a lack of data supporting many commonly used cough medications in children, yet there is data showing the potential for harm associated with these medications."<sup>8</sup> Why would anyone choose a potentially harmful medication for their child over a wholesome food, such as honey?

Four mechanisms are proposed for honey's healthy properties:<sup>9</sup>

- 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 desiccating bacteria and fungi and inhibiting their growth.
- 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 honey.
- Raw honey contains bee pollen, enzymes and propolis, all of which can stimulate new tissue growth.
- Honey can contain additional compounds, including essential oils, flavanoids, terpenes and polyphenols, depending on the plant from which the pollen was taken.

### Bee Pollen

"It takes one bee working eight hours a day for a month to gather one teaspoon of bee pollen pellets, which contain over 2.5 billion grains of flower pollen loaded with micronutrients, trace elements, minerals and antioxidants." Bee pollen is 40 percent protein, half of which is free amino acids that assimilate easily at the cellular level. In fact, studies have shown that the protein found in bee pollen is seven times more available than that found in beef.

According to researchers at the institute of Apiculture, Taranov, Russia, "honeybee pollen is the richest source of vitamins found in Nature in a single food."<sup>11</sup> Drs. Stephen Buchman and Justin Schmidt, authors of *The Hive and the Honey Bee*, write that bee pollen "has a nutritional composition that surpasses that of virtually any food typically eaten."<sup>12</sup>

In a separate study measuring the levels of polyphenols in foods, results show that bee pollen contains a remarkable amount of polyphenols, compared to fruits such as blackberries, peaches, apples and cranberries.<sup>13</sup> Polyphenols are a combination of bioflavonoids, organic acids and phenolic acids, contributing to most of the antioxidant activities in foods. Hence, bee pollen contains a high level of antioxidants, which are essential in strengthening the immune system. Because of this, bee pollen is good for patients undergoing chemotherapy. While chemotherapy attacks tumor cells, bee

## AMINO ACIDS

咳嗽、感冒症狀的用品，其實，在全球不同的地方，它都被用來緩解這類病症。」<sup>7</sup>

因為美國食品藥物管理局不主張六歲以下兒童使用非處方的咳嗽感冒藥物，Paul博士的研究為蜂蜜的療效提供著佐證，繼續證實它對於治療一歲以上兒童上呼吸道感染的有效性，並且不會伴隨任何有害的副作用。田納西州納什維爾市範德比特大學的Michael Dale Warren博士回應Paul的研究結論時概括道：「至今為止，許多治療兒童咳嗽的常用藥物都缺少足夠的數據支持，反倒有數據顯示這些藥物會為使用者帶來潛在的危害」<sup>8</sup>。既然如此，那有誰還會放棄像蜂蜜這樣有益健康的食品，反而去給自己的小孩使用那些具有隱患的藥物呢？

在維護健康方面，蜂蜜具有以下四種機製：<sup>9</sup>

- 蜂蜜中主要含葡萄糖和果糖。這些糖極具吸水性，吸水後形成粘稠的糖漿。如果將蜂蜜塗抹在傷口上，它會吸收身體的水份和其它體液，因此會使病菌和真菌脫水，以抑制他們的滋長。
- 原生蜂蜜中，含有一種葡萄糖氧化酶，如果將這種酶溶入少量的水中，就可生成一種溫和的抗菌劑 - 過氧化氫。葡萄糖氧化酶會被強光、熱度和加熱殺菌所破壞，因此市場上出售的絕大多數蜂蜜中都不含有此物質。
- 原生蜂蜜中還含有花粉、各種酵素和蜂膠，這些物質都可以刺激新生組織的生長。
- 蜂蜜中還可能含有其它的混合物。依照蜜蜂所採集植物花粉的不同它所含有的其它混合物也不盡相同，分別可為精油、類黃酮、帖烯和多酚等。

### 花粉

「每一小茶匙花粉顆粒的採收，都需要一只工蜂花費整整一個月的時間，每天工作八個小時，才可獲得。這一小茶匙的花粉中，彙集了超過二十五億粒的花粉，飽含著豐富的微量營養素、微量元素、礦物質和抗氧化劑。」<sup>10</sup> 在花粉中，有百分之四十的成份為蛋白質，其中有一半的蛋白質是自由氨基酸，十分容易被細胞吸收。其實，研究發現花粉中提供的可利用蛋白質是牛肉的七倍。

俄羅斯塔拉諾夫蜂業學院的科研人員指出「蜜蜂花粉是天然單項食品中維生素含量最豐富的食物。」<sup>11</sup> 撰寫「蜂巢和蜜蜂」一文的Stephen Buchman博士和Justin Schmidt博士在闡述花粉時寫道「它的營養成份幾乎優於任何其它食物。」<sup>12</sup>

一項單獨測量食品中多酚物質含量的研究結果顯示，與黑莓、桃子、蘋果和小紅莓這些水果相比，花粉中蘊含著數量驚人的多酚物質。所謂多酚物質，是由生物類黃酮素、有機酸和酚酸組成的混合物，正是它們在食物中起著抗氧化劑的活性作用。抗氧化劑是強化免疫系統的基本要素，而花粉中抗氧化劑的含量極高，正因為如此，花粉才能成為接受化



pollen stimulates the immune system.

Besides helping the immune system, bee pollen is especially effective in stabilizing body weight because bee pollen can increase the body's calorie-burning activity by accelerating the metabolic rate, which, in turn, regulates body weight. One vital ingredient in bee pollen that promotes healthy metabolism is lecithin, a nutrient that dissolves and drains fat from the body's most vital internal organs.<sup>14</sup>

Working internally, bee pollen also rejuvenates the skin. Dr. Lars-Erik Essen, a dermatologist in Halsinborg, Sweden, says: "Through transcutaneous nutrition, bee pollen exerts a profound biological effect. It seems to prevent premature aging of the cells and stimulates growth of new human tissues. It offers protection against dehydration and injects new life into dry cells. The skin becomes younger looking, less vulnerable to wrinkles, smoother, and healthier with the use of honeybee pollen,"<sup>15</sup> due to the high concentration of the nucleic acids RNA and DNA of the natural antibiotic factor found in bee pollen.

Among the many health-promoting properties found in bee pollen, one of the most commonly known is the ability to reduce seasonal airborne allergies. "Research shows that about 17 percent of hay fever sufferers said their symptoms were significantly improved with bee pollen."<sup>16</sup> The effectiveness of bee pollen against airborne allergies even prompted U.S. Senator Tom Harkin to get the National Institutes of Health to fund the Office of Alternative Medicine (OAM), where studies of nonconventional treatments are conducted, including the study of bee pollen's effect on reducing allergies.

### Conclusion

More and more clinically proven studies are showing how honey and bee pollen's rich nutrients, antioxidants, enzymes, vitamins and protein can help promote a healthy immune system. Regular consumption of honey and bee pollen helps provide wholesome energy and strength for the body. Ancient cultures realized the benefits of bee products, and modern science has amassed a body of evidence that supports and validates those benefits. The various food products the industrious honeybee provides are some of nature's most nourishing and supportive foods.



This article provides important, educational information only; it is not intended to promote any E. Excel products or theory.

### REFERENCES

- 1 Adderly, Brenda. "The Latest Buzz on Products of the Hive—Bee Products and Health." July 10, 2008. [http://findarticles.com/p/articles/mi\\_m0FKA?is\\_8\\_61/ai\\_59534980/print?tag=artBody:col1](http://findarticles.com/p/articles/mi_m0FKA?is_8_61/ai_59534980/print?tag=artBody:col1)
- 2 Ibid.
- 3 Broadhurst, C. Leigh, Ph.D. "Bee Products: Medicine from the Hive." *Nutritional Science*. August 1999. Retrieved July 10, 2008. [http://www.newhope.com/nutritionsciencenews/NSN\\_backs/Aug\\_99/bees.cfm](http://www.newhope.com/nutritionsciencenews/NSN_backs/Aug_99/bees.cfm)
- 4 Champion, Sara E. "A Case of Fournier's Gangrene." Retrieved July 2, 2008. <http://www.medscape.com/viewarticle/563170>
- 5 Douglass, David. "Honey Eliminates Skin-Colonizing Bacteria." *Reuters Health Information*. Retrieved July 2, 2008. <http://www.medscape.com/viewarticle/575897>
- 6 Challem, Jack. "Medical Journals Document value of Bee Propolis, Honey and Royal Jelly." *The Nutrition Reporter*. Retrieved July 10, 2008. [http://www.thenutritionreporter.com/bee\\_stuff.html](http://www.thenutritionreporter.com/bee_stuff.html)

療的病患的極佳食品。因為在化學療法攻治腫瘤細胞的時候，花粉可以用來強化免疫系統。

除了輔助免疫系統之外，花粉在穩定體重方面還特別有效，因為它可以通過加快新陳代謝的速度，增加身體燃燒卡路裡的活力，從而調整體重。花粉中一種能夠促進健康的新陳代謝的關鍵成份是卵磷脂，它是一種可以從體內最重要的器官中分解排除脂肪的營養素。<sup>14</sup>

花粉還會在體內發揮作用，讓皮膚煥發青春。瑞典赫爾辛堡的皮膚學家Lars-Erik Essen博士說：「通過經皮營養，花粉可以發揮出巨大的生物作用，似乎可以預防細胞的早衰並刺激新的人體組織的生長。它為身體提供防禦力，對抗失水並為乾枯的細胞注入新的生命。使用蜜蜂花粉，會使皮膚變得更加年輕，更少皺紋、更加光滑、更加健康，」<sup>15</sup> 因為花粉中富有高濃縮的天然抗菌元素核糖核酸RNA和脫氧核糖核酸DNA。

花粉具有多種促進健康的特性，其中最廣為人知的一項就是其降低季節性空氣傳播的過敏症的能力。「研究顯示，大約有百分之七的花粉症患者談到他們在使用了花粉之後，過敏的症狀明顯減輕。」<sup>16</sup> 花粉抑制空氣傳播過敏症的效益甚至引起美國參議員Tom Harkin的注意，在他的建議下美國國家健康研究院組建了替代醫學辦公室 (OAM)，專門研究非常規的治療方法，其中就包括對於花粉在減輕過敏症方面的療效的研究。

### 結論

越來越多臨床實驗的研究結果都顯示，蜂蜜和花粉中含有很豐富的營養素、抗氧化劑、酵素、維生素和蛋白質，它們能夠促進免疫系統的健康。經常攝取蜂蜜和花粉，有助於為身體提供能量，增強體質。人類的古代文化早就認識到了蜂類食品的巨大效益，而現代科學又累積了大量的證據，強調並證實了蜂類食品的這些效益。勤勞的蜜蜂為我們提供的各種各樣的蜂類食品，是大自然中的一些最具有滋補和保健功效的食品。

本文僅提供重要的知識信息，不作為推銷丞燕產品或理念之用途。

- 7 Barclay, Laurie, MD. "Honey May Effectively Treat Cough in Childhood Upper Respiratory Tract Infections." Retrieved July 2, 2008. <http://www.medscape.com/viewarticle/566789>
- 8 Ibid.
- 9 Honey Bee Products Potent in Cancer Prevention, Treatment." *Environment News Service*. Retrieved July 10, 2008. <http://www.ens-newswire.com/ens/dec2004/2004-12-07-01.asp>
- 10 Weir, Kenzie. "Bee Pollen as a Superfood." *Newsmax*. Retrieved July 9, 2008. <http://archive.newsmax.com/archives/articles/2004/7/11/193201.shtml>
- 11 Weir, ibid.
- 12 Sanford, Malcolm T. "Producing Pollen." *University of Florida IFAS Extension*. Retrieved July 9, 2008. <http://edis.ifas.ufl.edu/AA158>
- 13 "Bee Products as Antioxidants." Retrieved July 10, 2008. <http://www.vpico.com/articlemanager/printerfriendly.aspx?article=105567>
- 14 Weir, ibid.
- 15 Weir, ibid.
- 16 Adderly, ibid.