



# Food UPDATE

Novel Foods - Food Additives - Functional Foods - Food Ingredients

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## Inside this Issue:

**Mini Review**  
**Baobab - The Next**  
**“Super Food”?**  
...read more page 2

**Regulatory News...**  
**What's happening in**  
**North America and**  
**Europe**  
...read more page 3

**Hot Off the Press...**  
...read more page 3

**Upcoming Events**  
...read more page 3

**In Profile with...**  
**Neptune**  
...read more page 4

**Helping Companies Do**  
**the Right Thing, the**  
**Right Way!**  
...read more page 4



## Consumer Perception of Health Claims

Approximately 2,400 years ago, Hippocrates advised: “Let thy food be thy medicine, and thy medicine be thy food”. This concept of attaining optimal health *via* the diet not only still exists, but is becoming mainstream with increasing momentum. How did this movement come about, and is it here to stay? As skepticism towards science grows, the popularity of the support of good health *via* the diet does also.

As consumers become interested in health promotion through dietary choices, not only do natural healthy foods, such as fruits and vegetables, take center-plate, commercial functional foods also gain appeal.

Functional foods may be defined as foods in conventional formats that are consumed as part of a normal diet, and, through the addition or natural presence of one or more constituents, serve physiological roles beyond the fulfillment of standard nutrient requirements.

Consumers generally want to buy healthy foods, but many are reluctant to change how or what they eat. The addition of functional components to conventional foods can improve the quality of consumers’ diets with minimal change to their eating habits.

The public is constantly faced with new information regarding the effects of the foods and food constituents they eat on their health. The presence of a functional food/component and resulting health effects may be communicated to the consumer *via* a health claim (which describes the relationship between the food/component

and health) or a content claim (which describes the amount of a component present in the food). When a food has a health/content claim, consumers are more likely to perceive it as being healthy, and more likely to purchase it.

Although the type of claim (health or content) affects the perceived novelty of the food, it has been identified that the claim type has very little effect on the perceived healthiness, health effects, and appeal of the food. This indicates that, despite current regulatory focus on claim wording, many consumers do not consistently distinguish between health and content claims. For example, claims referring to increased calcium content, maintenance of bone health, and reduction of the risk of osteoporosis may be interpreted as being equivalent. A possible explanation for this lack of differentiation is that when the relationship between the nutrient and the health effect is well known, health effects may be inferred from a content claim.

Moreover, current research findings suggest that consumers have confused and possibly suspicious attitudes towards food science and marketing. Over 75% of consumers view claims on functional foods as confusing, and as being a form of advertising, rather than simply conveying health information. To facilitate consumer understanding, claim wording should be straightforward, consistent, and concise. With growing awareness of the relationship

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# Mini Review: Baobab – The Next “Super Food”?

From goji berries to açai berries, food ingredient and supplement manufacturers are keen to market their products as the next “super food”. The latest new ingredient may be one of Africa’s best kept secrets – until now. The dried pulp of a fruit known as baobab is receiving increasing attention following its novel foods approval by the European Commission in June 2008 for use as a nutritional ingredient in smoothie drinks and cereal bars. In the U.S., a review of a Generally Recognized As Safe (GRAS) Notice submitted to the U.S. Food and Drug Administration (FDA) is currently pending.

Baobab fruit, also known as monkey bread, among other vernacular names, is derived from the *Adansonia digitata* L. tree, which is native to Africa and also is found in parts of Asia and the Caribbean. The fruit is typically 6 to 8 inches long, is covered by velvety yellowish hairs, and has a soft, white, edible and nutritious flesh. The fruit pulp, as well as decoctions of the bark and leaves of the tree, has been used in traditional medicine for the treatment of malaria, as an astringent, an anti-inflammatory, and for urinary disorders and mild diarrhea, among other conditions.

Analytical studies have demonstrated that baobab fruit pulp is rich in vitamin C, having at least 3 times more than that present in oranges. Baobab fruit pulp also is reported to have as much as 56% water soluble pectin by weight and the oil is a source of omega-3 and omega-6 fatty acids. A study in which the nutrient

## ↓ Baobab Fruit (Cesar Calderon, Bugwood.org)



content of baobab milk, derived from the fruit pulp, was analyzed revealed that it contained more protein, iron, and calcium than human milk, cows’ milk, and most infant formulas.

There is a limited body of research specific to the health benefits of baobab, however, the available data do look promising. Baobab has been reported to have similar *in vitro* antioxidant properties as that of a standard grape seed extract, while having over 10 times the antioxidant activity of oranges. In rats, an aqueous extract of baobab fruit pulp (equivalent human dose of 12 to 18 g of fruit pulp) was reported to have anti-inflammatory properties equivalent to a human dose of 1.5 g of phenylbutazone, a non-steroidal anti-inflammatory drug. Baobab fruit pulp extract also was demonstrated to have similar analgesic and anti-pyretic effects to that of acetylsalicylic acid. PhytoTrade Africa, a fair and ethical trade organization that represents tens of thousands of rural southern African producers, was responsible for the submission of both the European novel foods application and U.S. GRAS Notice. With the European novel foods approval, PhytoTrade Africa is anticipating increased demand for baobab, with the hope of opening the global marketplace for this ingredient. Together with promising research on its health benefits, a favourable GRAS opinion from the FDA may result in an explosion of baobab products in the U.S. Some scientific references are available at <http://www.baobabfruitco.com/ENG/ResearchBaobab.html>.

## ↓ Baobab Tree in Tarangire National Park Tanzania



# Consumer Perception of Health Claims... cont’d

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between diet and health, consumers also are becoming more conscious of risks perceived to be related to new food technologies, genetic modification, and food processing or additives. The feelings of mistrust towards food additives of any kind likely stem from the increasing popularity of organic and unprocessed foods; thus, even functional additives may be perceived as being artificial and unhealthy.

Standards for safety testing and substantiation of health claims are increasing due to recent regulatory amendments in various jurisdictions. These high standards should be communicated to the consumer to reassure them that these regulations are in place for their sake, to enable them to put their trust in new food science, functional foods, and health claims, and to highlight that the presence of a health claim indicates proven health information rather than simply an advertising gimmick.

## Regulatory News...

In March 2009, **Health Canada** published its **Guidance Document for Preparing Submissions for Food Health Claims**. This document updates the 2002 Interim Guidance Document and provides a common submission format for all petitioners. As health claim authorization is granted for foods and food ingredients that are approved for use in Canada, any subject of an application that is not approved for use must also be the subject of a novel food application submitted to Health Canada either before or concurrent with the health claim application. Key aspects relating to quality assurance and the demonstration of causality of a health claim are discussed.

On June 17, 2009 the **U.S. Food and Drug Administration (FDA)** published a draft Guidance document for use of its **Reportable Food Registry**, an internet portal where reports are filed when it is believed that an adulterated food will cause serious adverse health consequences or death to humans or animals. The registry was developed for the food industry and applies to all FDA-regulated categories of foods. The draft guidance explains: who must submit reports of adulterated foods to FDA; how, when and where reports may be submitted; what information a report must include; and what steps must be taken to notify others in the supply chain of the adulterated food. The internet portal will be available for use in September 2009.

The **deadline of July 31, 2009** for the publication by the **European Food Safety**

**Authority (EFSA)** of the **first round of Article 13.1 health claim opinions** will be extended to at least September. The delay was reported to be due to on-going consultations between EFSA, the European Commission, and Member States. This first batch is expected to comprise 1,024 opinions, and the possible effect of this delay on the deadline of January 31, 2010 for the Community List of all permitted Article 13 claims is not known at this time.

The Genetically Modified Organisms (GMO) and Biological Hazards (BIOHAZ) panels of EFSA have confirmed the **safety of 2 antibiotic-resistant marker genes**, nptII and aadA, in genetically-modified (GM) plants on March 29, 2009. In the joint scientific opinion, the panels concluded that the antibiotic-resistant marker genes pose no threat to humans or the environment due to the lack of DNA sequence identity between plants and bacteria.

On April 8, 2009 the **Singapore Agri-Food and Veterinary Authority**, in conjunction with the **Health Promotion Board (HPB)**, **approved 5 nutrient and diet-related health claims** involving calcium and vitamin D, reduced sodium, reduced saturated and trans fat, fibre-containing foods, and dietary fibre. Only food products that have been approved by the HPB to carry the Healthier Choice Symbol may be considered for the use of health claims on their food labels. Currently, 2,400 products in Singapore carry the Healthier Choice Symbol.

## Hot Off the Press..

- Jing P, Bomser JA, Schwartz SJ, He J, Magnuson BA, Giusti MM (2008). Structure-function relationships of anthocyanins from various anthocyanin-rich extracts on the inhibition of colon cancer cell growth. *J Agric Food Chem* 56(20):9391-9398.
- Paulonis L (2008). The changing face of food and nutrition in Canada and the United States: opportunities and challenges for older adults. *J Nutr Elder* 27(3&4):277-295.
- Bugusu B, Meija C, Magnuson B, Tafazoli S (2009). Global regulatory policies on food nanotechnology. *Food Technol* 63(5):24-28. Available at: [http://members.ift.org/NR/rdonlyres/4E9ECADA-1B6D-4C59-9FD6-56D321625D7E/0/0509feat\\_nano.pdf](http://members.ift.org/NR/rdonlyres/4E9ECADA-1B6D-4C59-9FD6-56D321625D7E/0/0509feat_nano.pdf).
- Choi SS, Danielewska-Nikiel B, Kojima I, Takata H (2009). Safety evaluation of 1,4-alpha-glucan branching enzymes from *Bacillus stearothermophilus* and *Aquifex aeolicus* expressed in *Bacillus subtilis*. *Food Chem Toxicol*. 2009 May 23. [Epub ahead of print].

## Upcoming Events

### The 12th Annual NBJ Summit

July 22-24, 2009  
Dana Point, CA, U.S.A  
<http://www.nbjsummit.com/nbj09/public/enter.aspx>

### The 7th Natural Products Expo Asia

August 27-29, 2009  
Hong Kong, China  
<http://www.naturalproductsasia.com/>

### Food Ingredients Asia

September 9-11, 2009  
Bangkok, Thailand  
<http://fiasia.ingredientsnetwork.com/home>

### Natural Products Expo East

September 23-26, 2009  
Boston, MA, U.S.A  
<http://www.expoeast.com/expoeast09/public/enter.aspx>

### CHFA Expo East

October 1-4, 2009  
Toronto, ON, Canada  
<http://www.chfa.ca/>

### Health Ingredients Japan

October 14-16, 2009  
Tokyo, Japan  
<http://www.hijapan.info/>

### 2009 ISNFF

November 1-4, 2009  
San Francisco, CA, U.S.A.  
<http://isnff.org/>

### SupplySide West

November 11-13, 2009  
Las Vegas, NV, U.S.A  
<http://www.supplysideshow.com/west/>

### Food Ingredients Europe

November 17-19, 2009  
Frankfurt, Germany  
<http://fieurope.ingredientsnetwork.com/>

In Profile with...



Neptune Technologies & Bioresources Inc. (Neptune) is an industry-recognized leader in the innovation, production, and formulation of science-based and clinically-proven novel marine phospholipid products for the nutraceutical and pharmaceutical markets. The company focuses on growing consumer health markets, including cardiovascular, inflammatory, and neurological diseases, which are driven by consumers taking a more proactive approach to managing health and reducing the risk of disease.

The company conducts clinical trials to assess the potential health benefits of their products and to support regulatory approvals. Neptune has gained worldwide regulatory approvals including Generally Recognized as Safe and New Dietary Ingredient status in the United States, a Natural Product Number in Canada, complementary medicine approval in Australia, and pending publication of a positive opinion in relation to achieving approved Novel Food (including Food for Particular Nutritional Purposes) status in Europe. Neptune has its products marketed and distributed in over 20 countries worldwide.

Neptune is the pioneer and leader in marine omega-3 phospholipids, which are used in cholesterol management, joint health, inflammation, and cognitive function. Neptune Krill Oil NKO® represents a clinically-proven omega-3 phospholipid product exhibiting a high standard of safety, purity, and stability.

In collaboration with specific major food manufacturers, Neptune continues its research and development of functional food products with therapeutic health benefit claims. Moreover, in cooperation with specific major supplement producers, Neptune is developing a novel dietary supplement and functional food product line.

The Company also takes advantage of pharmaceutical opportunities through its pharmaceutical subsidiaries, Acasti Pharma for cardiovascular applications, and NeuroBioPharm for neurological applications. The Company is listed on the TSX.V:NTB and NASDAQ:NEPT. More information can be found on [www.neptunebiotech.com](http://www.neptunebiotech.com).

## Helping Companies Do the Right Thing, the Right Way!

Cantox has been successfully providing regulatory and scientific consulting services for more than 23 years. Cantox's Food and Nutrition Group has a thorough knowledge of the scientific and regulatory requirements for health claim substantiation in several jurisdictions, including Australia/New Zealand, Canada, European Union, Japan, Korea, and United States. In the area of Health Claims, Cantox:

- Conducts evidence-based systematic reviews of the totality of scientific data to determine sufficiency for health claim substantiation;
- Provides recommendations for the collection of appropriate data should the current scientific evidence be inadequate to support a health claim;
- Assists in the design, placement, monitoring, and management of clinical trial protocols for health claim substantiation;
- Compiles and oversees health claim applications submitted to regulatory authorities.

Cantox is dedicated to your health claim pursuits! By strengthening your product's image, a health claim will provide a competitive advantage as you enter marketplaces around the world. Let us help you navigate through the complex regulatory environments for health claims!

**CANTOX®**  
HEALTH SCIENCES INTERNATIONAL

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