

## Market Opportunities Diversify as the Benefits of Polyphenols Gain Wider Recognition

### ***Introduction and Current Markets***

Recognition of the beneficial properties of polyphenol-rich extracts and their role in supporting human and animal health has increased in recent years. These wide-ranging benefits of polyphenols include positive effects on cardiovascular health, endothelial function, cell growth, skin-aging and even cognitive function. They can aid women through the menopause and help maintain prostate health in men. Highly purified polyphenol extracts command the highest prices and these products have additional benefits in terms of taste, colour and technical functionality.

The global polyphenol market is thought to be worth \$740m with around 17kt in volume sales, growing at 6% *p.a.* and 8.5% *p.a.* in value and volume terms, respectively.

Polyphenols derived from fruits, wines and teas are most characterised with regards to their health benefits. Grapeseed polyphenols dominate the global market, while the second-largest category from green tea is most-rapidly growing. Consumers recognise dietary polyphenols as being beneficial, although they do not fully understand the structure-function relationships. The majority of consumer interest in polyphenols has been driven by efforts to preserve an active lifestyle within ageing European and Japanese populations.

### ***Additional Market Opportunities***

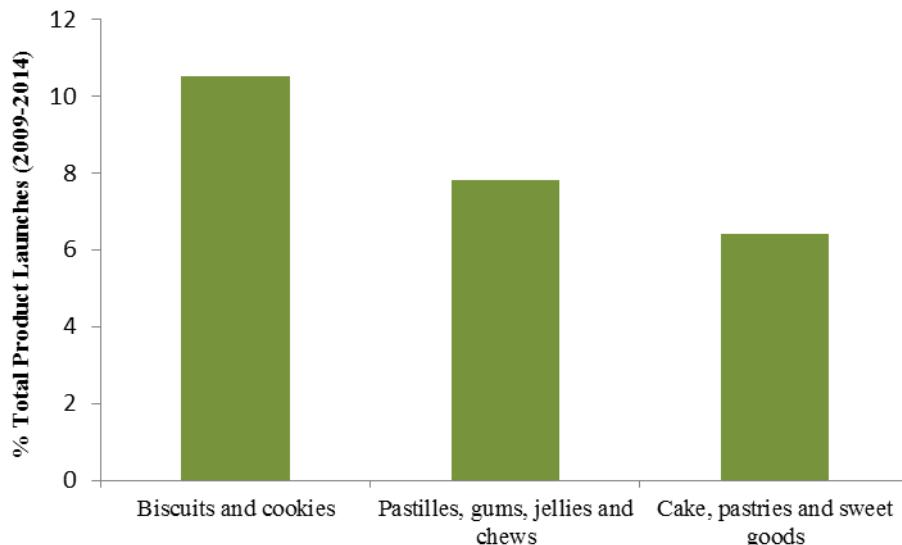
Perhaps the biggest potential function for polyphenols could lie in preventing or managing risk factors associated with the metabolic syndrome, including diabetes. CPL believes that the demographics and underlying health trends create ideal market conditions for value-added polyphenol products, especially as obesity fast-forwards issues like diabetes and cardiovascular health into a concern for much younger generations. There is evidence that polyphenols could delay or help manage forms of dementia, including Alzheimer's, where products are urgently needed but further research has to be done. Younger consumers adopting a proactive approach are also a target. This demographic is becoming interested in active health management to safeguard against future health risks. There are also potential opportunities in animal nutrition, where polyphenols can enhance the efficacy of vitamin E, improve immune health and decrease feed conversion ratios (FCR).

### ***Wholegrain Cereal Benefits are Already Recognised by Consumers***

Wholegrains and fibre are amongst the most widely accepted health food ingredients. For example, oats and barley  $\beta$ -glucans are recognised by the European Food Standards Agency as being helpful in maintaining normal blood LDL-cholesterol levels, and for reducing the rise in blood glucose after a meal. Depending on the cereal type, vitamins and minerals are also present. The well-publicised healthy reputation of cereals amongst consumers will be an important factor in marketing the health benefits of cereal polyphenols.

Polyphenols found in cereals include phenolic acids, flavonoids and resorcinol, with anthocyanins present in coloured cereal varieties, such as red maize. Many of the beneficial constituents are lost when the cereal grains are processed and refined. However PUReOPE's process offers an opportunity to recover and concentrate these valuable components and add them back into foods, supplements and other products, which is becoming popular (Figure 1).

Although the cereal-derived polyphenols market is not yet developed, many polyphenols are recognised as Generally Recognised as Safe (GRAS) in the US. Polyphenols are included in products within the growing natural cosmetics category *e.g.* for anti-aging, skin conditions, and personal care products. The PUReOPE project aims to produce products with quantified active polyphenols having a known bioavailability and efficacy, for a wide range of uses.



**Figure 1** **Popularity of Polyphenols as Ingredients within New Product Launches (2009-2014)**

**Source: Mintel (Europe)**

Potential applications could include the fortification of processed breakfast cereals or snack products, to make health-related claims. With the consumption of mobile snacks increasing, polyphenol inclusion could benefit the health profiles in popular 'convenience' foods. Already, polyphenols are popular ingredients in dietary supplements for their health-related benefits. Functional beverages containing soluble polyphenols have developed rapidly and should continue to be an exciting area, for example, beverages containing green tea extracts. To be successful, CPL believes the market could emphasise the benefits associated with adding back valuable components of the whole grain, similar to the way in which  $\beta$ -glucan and fibres are marketed. Polyphenol fortification will produce products with increased health functionality, but manufacturers must maintain the taste properties expected by consumers.

### **Future Prospects**

The polyphenols market is expected to grow at around 6% per year in value to reach \$1b, and at 8.6% *p.a.* in volume, to reach 25kt by 2020. CPL believes there is excellent potential for targeted health and food preservation strategies to drive growth in cereal polyphenols. Initial launches, however, should be easier in products already perceived to have a strong nutritional profile or those claiming other health attributes.

One of the key issues in the production of polyphenols is a reliable supply of raw materials and a guaranteed production volume. Given the availability of side streams from brewing and cereal processing, the PUReOPE project aims to overcome these problems, while producing a sustainable and healthy product with a local supply and reduced carbon footprint.

### **References**

Transparency Market Research (2013) Polyphenols Market - Global Industry Analysis, Size, Share, Growth, Trends and Forecast, 2012 – 2018  
 Grandview Research, Inc (2014) Global Polyphenols Market By Product and By Application, 2014 - 2020