

INTRODUCTION TO FUNCTIONAL FOODS AND INGREDIENTS

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FUNCTIONAL FOODS

This fact sheet provides information about what functional foods and ingredients are and presents a snapshot of the opportunities for South Australia.



What are functional foods?

Functional foods and beverages are those that provide an extra health benefit to the consumer beyond basic nutrition. Examples include foods that have been fortified with beneficial nutrients or foods that are free from certain components such as lactose or gluten-free.

Functional foods can be grouped into three categories; functional packaged foods, functional beverages and functional fresh foods.

Examples of functional packaged foods include breads and cereals that have additional ingredients that can provide a health benefit such as increased dietary fibre, vitamins or minerals. A range of dairy products have also been explored such as yoghurts containing live cultures, and lactose-free cheeses and yoghurts. The inclusion of phytosterols in margarines is another commonly available functional food product.

Examples of functional beverages include energy drinks and those enriched with vitamins and minerals or lactose-free milk. An example of a South Australian business that produces a functional beverage is Organic and Raw. Organic and Raw manufacture a fermented tea called Kombucha that provides live probiotic microorganisms (healthy bacteria and yeasts) to the consumer. Organic and Raw started production of their Kombucha product in 2011 and have since expanded their product range to six varieties and are selling their products nationally.

Primary produce can also be fortified during the growing process to develop functional fresh foods. This is usually achieved through manipulation of stock feeds or the growing environment. One example of a functional fresh food is eggs enriched with Omega 3.

What are functional ingredients?

A functional ingredient is a bioactive compound that can be used in the manufacture of functional food products. These bioactive compounds can be obtained from a variety of sources such as primary produce, marine sources, microorganisms and inorganic raw materials. Functional ingredients may also be derived from food processing waste providing additional economic benefits to food businesses. Many of these functional ingredients can also be used for the preparation of nutraceuticals.

Separation, purification and concentration techniques are often used to recover these compounds. The methods selected are dependent on the nature and economic value of the target compound(s) and

the chemical and/or biological structure from which it was sourced. Traditional techniques that have been used include solvent and water-based extraction, followed by filtration, and then distillation, evaporation, crystallisation or precipitation. However, techniques such as supercritical CO₂ fluid extraction, low-polarity-based extraction, membrane-based and molecular distillation are being used more frequently. These alternative techniques have several advantages in that they can be more efficient and more cost effective. In addition, there is also increasing concern regarding the use of solvents that, despite being food grade, can leave chemical residues. Considering the health conscience target market, these cleaner technologies are considered attractive – particularly as they reduce the use of solvents.

What are the opportunities for South Australia?

Markets in Australia and in the Asian Pacific region are facing ageing populations together with increasing incidence of lifestyle related diseases such as diabetes or bone health issues. Aligned with this, there is a growing awareness of the importance of healthy living and nutrition among many consumers. In markets such as India, South Korea, Malaysia and Singapore the forecast growth rates for functional foods exceed 9%. All eight of the key markets analysed by VTT (India, China, Hong Kong, Indonesia, Japan, Malaysia, Singapore and South Korea) showed long term growth in both functional foods and functional ingredients.

The manufacture of functional foods and functional ingredients represents an opportunity for South Australian producers in local, national and international markets. South Australian functional ingredients may be highly desirable in export markets due to the clean and green status of our food products and environment. In addition, it is also currently difficult to source Australian made functional ingredients for inclusion into food products destined for the Australian market which creates implications for country of origin claims.

Having capacity to manufacture functional ingredients and foods within South Australia's clean environment and strong food safety framework allows food manufacturers to differentiate their products and place their products into a higher quality bracket.

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