

Study shows potential of flaxseed gum for beverages

By Stephen Daniells, 27-Mar-2009

Flaxseed gum may enhance the nutritional profile of beverages, and could lead to a new range of novel drinks, says new research from Canada.

"Flaxseed gums are commonly employed in the cosmetic industry as texturing agents; however, in the food industry, their application has not yet been extensively examined," explained the researchers, led by Marcela Alexander from the Department of Food Science at the University of Guelph.

According to findings published in *Food Hydrocolloids*, the researchers report that, up to a level of 0.1 per cent flaxseed gum, electrostatic interactions between gum and whey protein produced a stable emulsion.

"The results of this study will give practical information on how to incorporate this novel polysaccharide with a positive nutritional image in food beverages already fortified with proteins," wrote Alexander and her co-workers.

However, with concentrations of flaxseed gum over 1.5 per cent the researchers noted that the *"microstructure, particle size, particle size distribution and low-shear apparent viscosity of the emulsion begin to change and become more affected by the presence of the gum"*, they said. *"These changes result in aggregation and phase separation."*

Healthy options

At last year's food exhibition SIAL, French trend tracking agency XTC, which compiled market data on trends and innovations in the food industry for the exhibition's popular innovation pavilion, said that in 2007 the health axis delivered the strongest progress.

Concepts with naturality values – notably organic certified – boosted the health axis. At the same time, products bearing functional 'medical' promises - antioxidant-rich, DHA-rich - also fed into this axis.

And there are clear signs that health may be spilling over, and merging into other trends. While data from XTC actually shows a drop from 25.8 per cent to 21.7 per cent, in health-positioned innovations from 2006 to 2007, there was a considerable rise in naturality, from 8.6 per cent to 11 per cent.

Flaxseed gum potential

The Guelph-based researchers formulated beverages with flaxseed gums mixed with whey protein-stabilized emulsion droplets. At an acidic pH of 3.5 they *"demonstrated the interaction and attachment of gums onto the surface of proteins due to electrostatic interaction between the oppositely charged molecules"*.

At higher concentrations, however, aggregation and phase separation occurred