

Healthcare industry BW

Gertrud Winkler is able to measure human taste

Why do consumers like the taste of some foods and dislike the taste of others? Gertrud Winkler, professor of nutrition and food sciences at the Albstadt-Sigmaringen University of Applied Sciences is focusing on precisely these questions. In her endeavour to promote healthy nutrition, Winkler has been involved in developing flour enriched with folic acid and has also done a great deal of work on creating optimised diets for children and adolescents.



Gertrud Winkler, professor of nutrition and food sciences at the Albstadt-Sigmaringen University of Applied Sciences
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"I find it very rewarding to be able to support young people during such an important period of development in their life," said Prof. Dr. Gertrud Winkler. Before the oecotrophologist became a lecturer at the Albstadt-Sigmaringen University of Applied Sciences, she focused exclusively on scientific research at different institutions and companies, including the Munich-based GSF Institute of Epidemiology and the company Kraft General Foods where she was in charge of the company's R&D Centre Europe focusing on regulatory affairs associated with food labelling and the nutritional value of different products as well as making use of her nutritional expertise to initiate the development of new products. Prof. Winkler told us that she has always endeavoured to keep in close contact with universities and students. "I quickly realised that teaching and motivating young

researchers is great fun," said Prof. Gertrud Winkler.

Working towards the development of folic acid-containing flour



Food technology laboratory at the Albstadt-Sigmaringen University of Applied Sciences
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Gertrud Winkler has been a lecturer at the Albstadt-Sigmaringen University of Applied Sciences since 1998. She deals with basic aspects of nutrition science, food sciences, product development and she has also supervised student projects. One of her research activities involved the development of flour enriched with folic acid in a project carried out in cooperation with a regional mill. "We supplemented flour in a way I believe should also be done by responsible food producers. We looked into the addition of certain nutrients in order to enrich cheap staple foods. Representative population studies have shown that specific population groups lack certain nutrients," explained Prof. Gertrud Winkler. Standard flour types were selected and the folic acid loss assessed in baked bread and other bakery products. The results provided information on the initial amount of folic acid that was necessary to reach a defined folic acid content in the final products. Scientific and medical studies have shown the importance of folic acid intake in young women. The studies have also shown that flour enriched with folic acid led to the reduction of neural tube defects in newborns. Folic acid belongs to the B vitamins and is important for cell division, amongst other things. Lack of folic acid is seen as a major risk factor for innate defects such as the failure of the neural tube to close.

In contrast, recent investigations have shown that folic acid might also enhance the pathogenesis of existing tumour diseases. For this reason, Prof. Gertrud Winkler does not support the view that flour

containing folic acid should be a legal requirement. "I think that the reservation and caution being shown by the German authorities in this matter is laudable. On the other hand, I would welcome greater commitment from food producers in terms of the enrichment of food with folic acid. This would be much better than marketing yet another ACE juice," said the researcher.

Assistance in allergen management

As part of her supervision of diploma and bachelor theses, Prof. Gertrud Winkler has developed allergen management concepts on behalf of numerous food producers. She has also helped the food producers by assessing and evaluating cross-contaminations, for example. Winkler believes that small companies who are only just starting to put in place successful allergen management procedures are experiencing problems in this area and she calls on these companies to put proper structures in place. "In many cases there are only a few relevant allergens. Employees can be trained to focus on particular allergens and the processing of raw materials containing such allergens can thus be optimised," said Prof. Winkler.

Food tests in the sensor technology laboratory

A new building completed in spring 2009 provides the "Food, Nutrition, Hygiene" courses offered by the Albstadt-Sigmaringen University of Applied Sciences with a state-of-the-art sensor technology laboratory where some of Winkler's work is carried out. "We also offer key services linked to the development of new products, to changes in the formulation of certain foods or their manufacturing process, and to tests aimed at establishing the minimum shelf life of such foods. Our service spectrum comprises sensory tests using panel, consumer and acceptance tests," said Winkler.

Winkler's laboratory has recently developed differently flavoured lentil spreads and mustard made from seasonal herbs on behalf of a company with an active social presence that also focuses on agricultural production. These products were recently presented at a slow-food fair and have now been commercialised. The researchers have also developed state-of-the-art formulations involving gelatine sheets or calorie-reduced dessert classics containing gelatine, which are now being used by a gelatine producer to provide information and new ideas to customers.

In the spotlight: The attractiveness of food

The experts in the sensor technology laboratory are also focusing on boredom tests in which both specifically trained people and untrained consumers compare foods (as well as cosmetics and drugs) according to taste, smell, optics, haptics (surface touch) and general impression. "These boredom tests are specifically used to determine whether a consumer sees a particular type of food as boring and whether a competing product is perceived as having a more interesting taste," said Prof. Gertrud Winkler.

One of the methods used by the researchers is Köster's boredom test in which the volunteers taste numerous small portions of foods and evaluate them on a specific scale. "There are also so-called home boredom tests in which volunteers test specific foods in their normal environment and note when they start to find a food item boring," said the oecotrophologist who did her PhD on the "validation of a food frequency assessment" at the Munich-based GSF Institute of Epidemiology.

Winkler believes that the food industry is coming under increasing pressure. "In my opinion, market saturation is a huge problem. In addition, consumers are often given either too little or incorrect

information and are often unable to act rationally when exposed to exaggerated, partially contradictory and incorrect information," highlighted the researcher.

Healthy nutrition sets a precedent

Prof. Gertrud Winkler's major research interest at the moment is school dinners. She believes that there are different reasons behind the continuing low level of acceptance of healthy school dinners. "Besides the problems of cost and capacity of school canteens, there is no tradition of providing school dinners in Germany, and individual dietary habits that are mainly formed in the home are often in opposition to the food offered by schools," said Prof. Gertrud Winkler going on to add that complex multifactorial events, energy-rich diets and the lack of physical activity are major reasons for overweight and adipose children, especially young children.

Further information:

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