New Patents

This section features recent applications worldwide for patents in areas relevant to food science and technology. Each entry gives a concise summary of the patent application, along with details of where and by whom it has been filed. Due to the large number of patent applications each month, selected patents only are featured in each issue of *Trends in Food Science & Technology*.

Additives

Non-caloric bulking agents

Carosino, L.C. and Clayton, A.B. (Hercules Inc., Wilmington, DE, USA) United States Patent US 5 319 048

The composition and method of manufacture of a bulking agent that can be substituted for sugar or starch to reduce the caloric content of foods. The composition comprises the polymeric product of the reaction of a water-soluble polyol with a di- or tri-epoxide in water containing a water-soluble inorganic base that serves as a catalyst.

Chromatography of polydispersed saccharides

van Loo, J., Booten, K. and Smits, G. (Raffinerie Tirlemontoise SA, B-1150 Brussels, Belgium) PCT International Patent Application WO 94/12541 A1 [in French]

Column chromatographic separation of a metastable polydispersed saccharide composition results in a polydispersed saccharide product that is free of low molecular weight saccharides, and suitable for use in foods.

Encapsulated flavourings

Duby, P. and Huynh-Ba, T. (Société des Produits Nestlé SA, Vevey, Switzerland) Swiss Patent CH 683 995 A5 [in French]

A process for the manufacture of encapsulated acetyl-2-pyrroline-1, which can be used as a food flavouring, and for the manufacture of (alkoxy-1-ethenyl)-2-pyrroline-1 and other intermediates in the process.

Food defoamer

Ueda, M. and Takenawa, S. (Fujisawa Pharmaceutical Co. Ltd, Osaka, Japan) PCT International Patent Application WO 94/14337 A1 [in Japanese]

A readily dispersible food defoaming powder, which contains a linear fatty acid monoacylglycerol, lecithin, a water dispersibility improver and dextrin, functions satisfactorily, even at room temperature.

'Brazzein' protein sweetener

Hellekant, B.G. and Ming, D. (Wisconsin Alumni Research Foundation, Madison, WI, USA) United States Patent US 5 326 580

A protein sweetener, isolated from *Pentadiplandra brazzeana* Baillon, that is thermostable, lysine-rich and has a relatively persistent taste. A recombinant host capable of producing it in large quantities and compositions containing the product are described.

Fibre enriched in aglucone isoflavone

Shen, J.T. (Protein Technologies International Inc., St Louis, MO, USA) United States Patent US 5 320 949

Manufacture of a vegetable protein fibre enriched with aglucone isoflavone. Vegetable protein material is extracted to form a slurry of protein, fibre and glucone isoflavones. The pH of the slurry is adjusted to ~6–8 and the slurry reacted with a β-glucosidase to convert the glucone isoflavones in the slurry to aglucone isoflavones. The fibre fraction is recovered from the slurry by centrifugation or similar means to provide an aglucone-enriched fibre.

Protein ageing inhibitor

Ulrich, P.C., Cerami, A. and Wagle, D.R. (Rockefeller University, New York, NY, USA) United States Patent US 5 326 779

A method and composition for inhibiting nonenzymic crosslinking (protein ageing). The method, which can be used for the prevention of food spoilage, involves contacting a target protein with a composition containing 1,2-disubstituted benzimidazoles capable of inhibiting the formation of products occurring as a result of the glycosylation of the target protein.

Cereals

Germinated rice

Bon, J.J. and Gauthier, J.M. (Société Geris sarl, France) French Patent Application FR 2 700 246 A1 [in French]

A process for the germination of husked rice to yield a product intended for food use, with a nutritional value higher than that of non-germinated rice. The husked rice grains are washed, then steeped in sterile water; they are then held for controlled periods in a humid atmosphere (with intermittent spraying) for germination, after which they are dried.

Light-shielded production of chlorophyll-containing snacks

Tage, K., Narukami, Y. and Miyaoku, Y. (House Food Industrial Co. Ltd, Higashi-Osaka, Japan) United States Patent US 5 326 583

A puffed snack prepared, under completely light-shielding conditions, from chlorophyll-containing plant grains is made by pulverizing and storing the grains. Pulverized grains are puffed in a screw extruder at a die temperature adjusted according to grain water contents. A degree of puffing of 3–28 times is used. The final product has a water content of ≤7% (w/w) and is treated with oil and fat before packing into a light-shielding container. The total time of light exposure during puffing, application of oil and fat, and packing is <18 h.

Engineering/packaging

Limonene-impervious citrus juice carton

Wright, R.V. and Chuprevich, A.M. (Champion International Corp., Stamford, CT, USA) United States Patent US 5 324 528

A composite barrier laminate for a citrus juice carton and its use for improving juice shelf life. The composite barrier laminate has a series of layers, one of which is a thin barrier skin coat in contact with the juice. The skin coat is impervious to the antimicrobial agent D-limonene and is effective in preventing the migration of D-limonene present in citrus juice.

Hygiene/technology

Controlled antimicrobial H_2O_2 treatment

Endico, F.W. (Endico, 440 E 86th St, New York, NY 10028, USA) United States Patent US 5 328 706

A manufacturing process for semi-viscous and viscous foods uses an aqueous solution of H_2O_2 to inhibit microorganisms. Peroxide decomposition is regulated by a protein-derived enzyme