FOOD (incl. Dairy, Fishery, Poultry and other Plant and Animal products)

NPARR 2(4), 2011-0388, Hypolipidaemic effects of dietary whole soybean curd (jeondubu) in rats

The characteristic of whole soybean curd is that it includes the soybean residue that is discarded as waste in the manufacture of usual soybean curd (known as tofu). In this study the effect of dietary whole soybean curd on lipid profiles in rats was compared with that of usual soybean curd. Rats were fed for 4 weeks with diets differing only in the source of protein, namely casein, whole soybean curd or usual soybean curd. There were no significant differences in growth parameters due to diet differences. However, the two groups fed with curds had significantly lower levels of serum cholesterol and triglyceride than the group fed with casein, the greatest reduction in lipid profiles being observed in the group fed with whole soybean curd. The serum high-density lipoprotein cholesterol/total cholesterol ratio was higher in rats fed with whole soybean curd. The results suggest the possibility that whole soybean curd may have more beneficial effects in controlling serum lipid profiles than usual soybean curd that is normally consumed [Keong Hee Lee, Yeon Ho Jeong, Beomgoo Lee, Wisoo Kang and Yong Soon Choi* (Division of Medical Biotechnology, College of Biomedical Science, Kangwon National University, Chuncheon 200-701, South Korea), Journal of the Science of Food and Agriculture, 2011, 91(13), 2329-2332].

NPARR 2(4), 2011-0389, Edible coating and post-frying centrifuge step effect on quality of vacuum-fried banana chips

A high oil content in fried banana chips shortens the shelf life of the product and causes a decrease in product acceptability to consumers. The oil absorption problem associated with fried products might be reduced by using hydrocolloids as edible coatings and modifying the frying process during the oil centrifuge step of vacuum frying. The objective of this study was to determine the effect of edible coating materials and the speed of the oil centrifuge step on the amount of oil absorption and the physical properties of vacuum-fried banana chips. Compared with regular vacuum-fried products (control samples), banana chips coated with either guar gum or xanthan gum solutions at 1.5% or centrifuged at a higher speed than standard conditions (from 140 to 280rpm) reduced oil absorption by 25.22, 17.22 and 17.31%, respectively. Moreover, the combination of an edible coating and the higher centrifugation speed resulted in a greater reduction of oil absorption (33.71%) compared with control samples. Therefore, banana chips coated with an edible coating and produced using the higher speed during the oil centrifuge step in the vacuum-frying process maintained a good quality with low oil content, representing a healthier snack for consumers [Rungsinee Sothornvit* (Department of Food Engineering, Faculty of Engineering at Kamphaengsaen/Center of Excellence for Agricultural and Food Machinery, Kasetsart University, Kamphaengsaen Campus, Nakhonpathom 73140, Thailand), Journal of Food Engineering, 2011, 107(3-4), 319-325].

NPARR 2(4), 2011-0390, Quick-boiling noodle production by using infrared drying

In this study, infrared treatment at different powers was used at drying stage of noodle production. Drying time was reduced to 3 min 30 s and 50% reduction in cooking time was obtained at the highest power. Lower cooking loss and total organic matter values, higher maximum force values were obtained for noodles dried by using infrared, indicating improved quality. Infrared treatment generally caused an increase in Rapid ViscoAnalyzer viscosity values of the noodles. Starch granules of the noodles dried by using infrared retained their birefringence to a large extent and increase in intensity of some peaks and formation of a new peak at 2h = 20 (V-type diffraction pattern) were observed in X-ray diffraction patterns. Relative intensities of some protein bands in SDS–PAGE patterns decreased, total dietary fiber and enzyme resistant starch contents increased slightly. Starch digestibility (in vitro) values increased gradually as the infrared power applied increased [Arzu Basman*, Seda Yalcin (Hacettepe University, Faculty of Engineering, Food Engineering Department, 06800 Beytepe, Ankara, Turkey), Journal of Food Engineering, 2011, 106(3), 245-252].
Bioactive peptides derived from milk proteins are of particular interest to the food industry due to the potential functional and physiological roles that they demonstrate, particularly in relation to cardiovascular disease (CVD). By 2020 it is estimated that heart disease and stroke will become the leading cause of death and disability worldwide. Acute and chronic cardiovascular events may result from alterations in the activity of the renin-angiotensin aldosterone system and activation of the coagulation cascade and of platelets. Medications that inhibit angiotensin converting enzyme (ACE) are widely prescribed in the treatment and prevention of cardiovascular disease. ACE inhibitory peptides are of particular interest due to the presence of encrypted inhibitory peptide sequences. In particular, Ile-Pro-Pro and Val-Pro-Pro are fore runners in ACE inhibition, and have been incorporated into commercial products. Additionally, studies to identify additional novel peptides with similar bio-activity and the ability to withstand digestion during transit through the gastrointestinal tract are ongoing. The potential sources of such peptides in cheese and other dairy products are discussed. Challenges to the bioavailability of such peptides in the gastrointestinal tract are also reviewed. Activation of platelets and the coagulation cascade play a central role in the progression of cardiovascular disease. Platelets from such patients show spontaneous aggregation and an increased sensitivity to agonists which results in vascular damage and endothelial dysfunction associated with CVD. Peptide sequences exhibiting anti-thrombotic activity have been identified from fermented milk products. Studies on such peptides are reviewed and their effects on platelet function are discussed. Finally the ability of food derived peptides to decrease the formation of blood clots (thrombi) is reviewed. In conclusion, due to the widespread nature of cardiovascular disease, the identification of food derived compounds that exhibit a beneficial effect in such widespread areas of CVD regulation will have strong clinical potential. Due to the perception that food derived products have an acceptable risk profile they have the potential for widespread acceptance by the public. In this review, selected biological effects relating to CVD are discussed with a view to providing essential information to researchers.

Phelan, M. and Kerins, D* (Food for Health Ireland, University College Cork, Western Road, Cork, Ireland), *Food and Function*, 2011, 2(3-4), 153-167.

Fish patty from common carp (Cyprinus carpio Linn.) which has low consumer preference due to the presence of intramuscular spines was developed and the effects of fish weight and the type of extender on product quality were determined. Six different types of fish patties were prepared by using the fish belonging to 3 weight groups (250-500 g, 501-750 g, and 751-1,000 g) and using 2 extenders (boiled potato and corn flour). Patties containing potato had higher moisture (70.6-73.3%), protein (31.5-32.7%) and lipid (3.3-4.6%) contents than those with corn flour (60-65.2, 27.8-33.3, 2.6-3.8%, respectively). Cooking decreased protein but increased lipid, soluble sugars, and gross energy contents of patties. Corn flour used patties gave higher cooking yield than those with boiled potato. These also had higher fat retention capacity and gross energy values. The 501-750 g group patties containing boiled potato had significantly higher scores for texture and overall acceptability [Sehgal, H.S.*, Shahi, M., Sehgal, G.K. and Thind, S.S (Department of Zoology, Punjab Agricultural University, Ludhiana 141 004, India), *Journal of Food Science and Technology*, 2011, 48(2), 242-245].

An international group of experts from the food industry, academia, and governments met in Amsterdam in May 2009 to discuss approaches for controlling Listeria monocytogenes in ready-to-eat (RTE) foods in anticipation of an agreement by Member States on the Codex Guidelines for the pathogen in foods. The workshop was organised by Ewen Todd (Michigan State University) in cooperation with the European Federation of Food Science and Technology and the Global...
Harmonization Initiative. The group felt there is a need for a risk-based policy with input from all the stakeholders at local and national levels. An important part of the background is to review the critical factors for control, including the unique growth, survival and virulence characteristics of the pathogen; identifying specific populations at risk; and defining what RTE foods are. They also saw the need for L. monocytogenes food-source attribution through review of outbreak data, implementation of case-control studies, expert elicitations, microbial source tracking, and development of risk assessment models. They also indicated that surveillance of both listeriosis and the gastrointestinal non-invasive form of illness caused by the pathogen are important for public health agencies to establish or enhance; this would require coordination of laboratories through better communication and reporting for the analysis of clinical cases, foods and environmental sources. These laboratories should be also accredited, with some being reference laboratories at national or regional levels. There was consensus agreement on the microbiological criteria as specified in the Codex Guidelines, but it was recognized there were challenges for industry to meet these and government agencies to assess compliance, requiring a robust testing regime for both food and food-contact surfaces at all stages in the production system, as well as for environmental monitoring. Other issues are the development, validation, and acceptance of quantitative methods sufficient to detect the pathogen in food at levels <100CFU g⁻¹; determining the food's ability to support the growth of the pathogen or not through challenge studies, and risk assessment models, appropriate labelling of RTE foods, and a standardized approach to tracing and tracking of products throughout the food chain. There is also a need for food worker education and training, and consumer awareness and responsibility. Message mapping is one approach to instill the essential food safety messages regarding listeriosis and the safety of RTE foods for both employees and the public [Luber, P., Crerar, S., Dufour, C., Farber, J., Datta, A., Todd, E.C.D. (Department of Advertising, Public Relations and Retailing, Michigan State University, East Lansing, MI 48823, United States), Food Control, 2011, 22(9), 1535-1549].

NPARR 2(4), 2011-0394, Evaluation of honey based carrot candy

Candy was prepared with 3 different combinations of honey and carrot by using 750 g honey+1,000 g carrot (T1), 1,000 g honey+1,000 g carrot (T2) and 1,250 g honey+1,000 g carrot (T3). To establish the best product, sensory evaluation was done on 9-point Hedonic scale. T1 was found to be most preferred candy. Further the T1 candy was assessed for overall quality during storage at room temperature (25-30 °C) for 6 months. Candy can be preserved safely for 6 months in both glass and LDPE packaging materials [Durrani, A.M.*, Srivastava, P.K., Verma, S. (Department of Home Science, Faculty of Agricultural Sciences, Aligarh Muslim University, Aligarh 202002, India), Journal of Food Science and Technology, 2011, 48(4), 502-505].

NPARR 2(4), 2011-0395, Physico-chemical characteristics of defatted rice bran and its utilization in a bakery product

Defatted rice bran (DRB), a byproduct of rice milling is a rich source of dietary fiber and minerals. In the present study, the physico-chemical characteristics, antioxidant potential of defatted rice bran (Laboratory-LDRB and Commercial -CDRB) and its utilization in preparation of bread were studied. The effect of incorporation of CDRB at varying levels (5, 10 & 15%) on the quality characteristics of bread including physical, rheological and sensory attributes were evaluated and the dietary fiber content and antioxidant activity were determined. The results indicated that LDRB had better nutrient profile, physical and antioxidant properties than CDRB. On the basis of physical characteristics, breads with 5% and 10% CDRB were found to be acceptable as such and those containing 15% were acceptable with addition of bread improvers. The dietary fiber content and total antioxidative activity of bread increased with increasing levels of CDRB, which also improved the shelf life. The results reveal that DRB can be incorporated in breads upto 10% and 15% as such or with bread improvers respectively, as source of fiber and natural antioxidant, as a functional ingredient [Sairam, S.*, Gopala Krishna, A.G., Urooj, A. (Department of Studies in Food Science and Nutrition, University of Mysore, Manasagangotri, Mysore 570 006, India) Journal of Food Science and Technology, 2011, 48(4), 478-483].