

Farkas, J.: Memorial meeting at the 100th anniversary of the birth of Dr. Gábor Török.
Pp. 1-2.

Editorial: Park, K.H.: Structured and modified starch for food industry – how far can microbial enzymes and transgenic plant cooperatively work with?.

Pp. 3-5. parkkh@plaza.snu.ac.kr

Atasever, M., Keles, A., Ucar, G., Guner, A.: Use of different salting techniques in Halloumi cheese: effect on sensory, microbiological and chemical properties.

Pp. 7-14. atasever@atauni.edu.tr

In this study, Halloumi cheese samples were produced from 1:1 mixtures of ewe's and cow's milk. Cheese samples were divided into two groups. Samples of the first group were dry salted and then vacuum packed. Next group samples were ripened in tin packs containing brine solution of 13% salt content. The changes in chemical, microbiological and sensory properties of the samples were investigated during the ripening period. It was found that the samples of the first group had higher dry matter and fat contents and acidity values but lower in salt and ash contents than the samples of second group. Also it was observed that salt and ash contents and acidity values were increased in both groups during the ripening period while pH values were decreased. In microbiological view, coliforms, total viable, yeast and mould counts were higher in the first group than the second one. Coliforms were decreased in both groups during the ripening period. On the other hand, total viable, yeast and mould counts were decreased in second group. According to sensory evaluations the first group samples was more preferred. The yield of cheese was determined as 15.40%.

Keywords: Halloumi cheese, ripening, package, and salting techniques

Nejedli, S., Zoundzija, M., Hraste, A., Kozaric, Z., Gjurcevic Kantura, V.: Influence of the muscle fibre type composition and the proportion of connective tissue on the sensory acceptance of beefsteak tartare.

Pp. 15-25. snejedli@vef.hr

The investigation was carried out on 5 different muscles 5 fattened bullocks of the Croatian Simmenthal breed aged 15 months and weighting about 400 kg and beef steak tartare type products made of this muscles. Comparing the structure of the muscles used in production of the beef steak tartare, one may conclude that m. psoas major and m. longissimus dorsi are formed by dominantly white dynamic FG muscular fibres representing more than a half of all muscular fibres. In comparison with other muscles, the afore mentioned muscles contain the least quantity of connective tissue. The investigations showed some statistically irrelevant differences ($P > 0.05$) concerning the fibre diameters and volum density of connective tissue in m. psoas major and m. longissimus dorsi (L2). Some statistically irrelevant differences were also observed in the evaluation of the beef steak tartare type products made from these muscles. The products prepared from m. semimembranaceus and m triceps brachii were qualified worse than those made from m. psoas major and m. longissimus dorsi, which was statistically significant ($P < 0.05$). As m. semimembranaceus and m triceps brachii contain

less white fibres (41.0% and 43.1%) than red and intermediate ones (59.0% and 56.9%) and also more connective tissue (17.0% and 13.0%) than m. psoas major (6%) and m. longissimus dorsi (9% and 7%), these factors probably contributed to the lower ranking of the products made from m. semimembranaceus and m. triceps brachii.

Keywords: beef muscles, histochemical characteristics, beef steak tartare quality

Mayer, Á., Rezessy-Szabó, J., Bognár, Cs., Hoschke, Á.: Research for creation of functional foods with Bifidobacteria.

Pp. 27-39. mayer@omega.kee.hu

Twenty six Bifidobacterium strains were isolated from human faeces. Seven strains were identified as *B. bifidum*, 4 strains as *B. breve*, 10 strains as *B. longum*, 2 strains as *B. pseudocatenulatum* and 3 strains as *B. dentium* by 16S rDNA analysis. The isolates from human origin showed strong adherence to the human tissue cultures. Three out of 12 the tested isolates repressed the growth of enteropathogenic bacteria. Utilisation of 9 commercially available oligosaccharides was tested by both Bifidobacteria and enteropathogens. Pro-, pre- and synbiotic food was made. Their effect was evaluated in in vivo feeding experiments where healthy and antibiotic treated mice were used as test animals. During the four-week feeding period the composition of the colonic microbiota of the healthy mice did not change characteristically in any feeding group. However the microbiota of mice in which it had been killed by antibiotic treatment was recovered by feeding with synbiotic food.

Keywords: Bifidobacteria, functional food, identification, probiotic

Apáti, P., Szentmihályi, K., Vinkler, P., Szőke, É., Kéry, Á.: Nutritional value and phytotherapeutic relevance of *Solidaginis herba* extracts obtained by different technologies.

Pp. 41-51. apatipal@drog.sote.hu

Solidago canadensis L. (Asteraceae) has been used in European phytotherapy as a urological and antiphlogistical remedy for centuries. The behaviour of dissolution of mineral elements into different tinctures and aqueous extracts obtained from *Solidaginis herba* was investigated in connection with their quercetin glycoside and organic acid amount. Commonly applied aqueous and alcoholic extracts were analysed for Al, As, B, Ba, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mn, Mo, Na, P, Pb, S, Ti, V and Zn content. The concentrations of the minerals examined were detected by inductively coupled plasma emission spectrometry (ICP-OES). Determination of the flavonoids in *Solidaginis herba* and extracts was carried out by a spectrometric method, as required by the German Pharmacopoea. For the study of the flavonoid composition of the crude drug, the HPLC technique was applied.

To determine the relative nutrient contribution of these pharmaceuticals to the diet, data obtained were combined with flavonoid content particulars, then a comparison with U.S. Recommended Dietary Allowances (RDA) was made. For evaluation of the phytotherapeutic relevance, K/Na ratio was also calculated.

It has been found that the pharmaceuticals examined are important sources of potassium, chromium, manganese, calcium, magnesium, phosphorus and lower sources of iron and zinc, assuming a daily intake of 1-2 l aqueous extracts as recommended for urological diseases.

Flavonoid content of different *Solidaginis herba* extracts ranged from 62.4 mg l⁻¹ to 305.2 mg l⁻¹.

Keywords: *Solidago canadensis* L., phytopharmaceutical preparations, flavonoids, mineral elements

Bozan, B., Kosar, M., Tunalier, Z. Ozturk, N., Baser, K.H.C.: Antioxidant and free radical scavenging activities of *Rhus coriaria* and *Cinnamomum cassia* extracts. Pp. 53-61. bbozan@anadolu.edu.tr

Antioxidant and free radical scavenging activities of the extracts of sumac (*Rhus coriaria*) fruits and cassia (*Cinnamomum cassia*) cortex were studied. Plant samples were extracted with methanol:water (80:20) and an aliquot of each extract was fractionated using n-hexane and ethylacetate. Antioxidant activities of n-hexane, ethyl acetate and water fractions were measured using Fe²⁺ induced linoleic acid-TBA-peroxidation reaction and the Rancimat methods. Free radical scavenging activities of the fractions were determined on 2,2-diphenyl-1-picrylhydrazyl radical (DPPH.). Results were compared with those for butylated hydroxyanisole (BHA), butylated hydroxytoluene (BHT). The ethylacetate fraction of plant materials exhibits a marked antiradical activity on DPPH., higher than those of BHT and BHA; however, their antioxidant activity on the linoleic acid peroxidation was less than those of BHA and BHT.

Keywords: antioxidant activity, *Cinnamomum cassia*, *Rhus coriaria*

Kocsis, N., Márkus, F., Mednyánszky, Zs., Amtmann, M., Korány, K.: Recognition experiments of the vintage year 1997 hot and red paprika (*Capsicum annum*) varieties grown in Kalocsa. Pp. 63-75. korany@elfiz2.kee.hu

Comparison of Hungarian ground red paprika volatiles of known origin (identical to cultivated varieties grown in Kalocsa, Hungary) and provenance has been performed following simultaneous distillation-extraction sample preparation. After polar phase capillary gas-chromatography, mass spectrometric identification of as many compounds as possible was carried out to precisely describe the aroma profile of the cultivars. For conceptualizing the results a data evaluation and interpretation method has been elaborated considering the component ratios that are much more characteristic of the cultivars than the absolute amounts themselves. Relative intensity interpretation of the peak areas (y-axis) and Programmed Temperature Retention Index (x-axis) measurement resulted in aromagrams individually characteristic of the cultivated varieties. In an identification experiment the cultivars have been recognized successfully by the graphic visualization of the results called aroma-spectra (by analogy to mass spectrometry) method.

Keywords: paprika volatiles, simultaneous distillation-extraction (SDE), capillary gas chromatography, mass spectrometry

Rurik, I., Antal, M.: Nutritional habits and lifestyle practice of elderly people in Hungary. Pp. 77-88. rurik.dr@axelero.hu

The aim of this study was to evaluate the nutritional status of elderly belonging to one primary care office. Twenty seven men and 26 women, all over 60 years were involved. Nutritional assessment, anthropometric measurements were performed, serum proteins, lipid and iron status and hematological parameters were determined.

Energy and protein intake was sufficient, but the distribution of energy with a high fat and low carbohydrate was inadequate. Iron, copper, calcium, retinol and folate intake was lower, whereas sodium, ascorbic acid and cobalamine intake was higher than the Hungarian recommendation. The prevalence of obesity characterized by body mass index or waist circumference was higher in women than in men. The percentage of pathological levels of lipid parameters was also higher in women. No iron deficient erythropoiesis was detected, but high serum ferritin concentration as a marker of body iron store was determined in some cases.

General practitioners have possibilities to influence the nutritional habits of elderly, therefore to try reducing the incidence of obesity, cardiovascular diseases and stroke. Iron status of Hungarian elderly looks to be convenient, so supplementation without testing the iron status would be useless and harmful.

Keywords: elderly, energy, nutrient intake, anthropometry, lipid, iron, nutritional status

Simon-Sarkadi, L., Gelencsér, É., Vida, A.: Immunoassay method for detection of histamine in foods.

Pp. 89-93. sarkadi@mail.bme.hu

A novel screening immunoassay for histamine was used for detection of histamine in different foodstuffs. The detection limit of this assay was 20 mg kg⁻¹. The concentration of histamine varied between 182- 982 mg kg⁻¹ in sauerkraut, cheese and fish samples and 26-18433 mg l⁻¹ in milk, sparkling wine and wines.

The applied competitive enzyme immunoassay (ELISA) seemed a reliable technique for simple and rapid determination of histamine in food.

Keywords: histamine, food, ELISA

Buzás, F.E.: Pricing, costs and profit in food retailing.

Pp. 95-101. University of Debrecen, H-4032 Debrecen, Böszörményi út 138, Hungary.

Viewed from a theoretical-economic approach, the consumer price contains the costs of production, processing and trading, as well as the profit share related to these activities. In practice, particularly in the food sector, this kind of linear accumulation has rarely succeeded. In the case of foods, due to a decrease in consumption and vertical competition, not only the profit share, but often the some of the costs could not succeed either in the selling price. This failure has an impact on agricultural producers and the food industry, whereas in commerce, the profit-need could be realised easier. In the formation of a food consumer price there are diverse practices in use from the simple markup pricing method to the complex marketing strategies-based price-forming. This paper presents the results of price analyses done in the course of food retail activity investigation.

Keywords: economics of retailing, marketing costs, price analyses

Pálmai, M., Kiskó, G.: Studies on the growth of *Listeria monocytogenes* and *Lactobacillus casei* in mixed cultures.

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The effect of the lactic acid production of *Lactobacillus casei* on the growth characteristics of *Listeria monocytogenes* was examined in milk. The effect of temperature (7, 13, 20 °C) and the co-ratios with *Lb. casei* at different cell count ratios (10:1, 100:1, 10000:1) on growth of *L. monocytogenes* were studied. At 10 000:1 ratio induction of an early stationary phase of *L. monocytogenes* occurred. An exponentially decreasing correlation was observed between the logarithmic maximum population of *L. monocytogenes* and the initial log counts of lactobacilli. The Baranyi model was fitted to the obtained growth curves. The Baranyi equation provided good fit for lag and exponential phase of *L. monocytogenes*. According to our observations, pH decrease does not seem to be the main factor of early stationary phase induction of *L. monocytogenes* in milk.

Keywords: *Listeria*, lactobacilli, competition, curve-fitting

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