

**Holló, J.:** Celebrating Professor József Farkas

---

**Bánáti, D.:** His profession is his passion. For the 70th birthday of Professor József Farkas.  
Pp. 1-3. [d.banati@cfri.hu](mailto:d.banati@cfri.hu)

---

**Bánáti, D., Lakner, Z.:** Modern biotechnology and the Hungarian consumer.  
Pp. 5-23. [lakner@omega.kee.hu](mailto:lakner@omega.kee.hu)

The article presents survey results and analyses from a research project to conduct a study on the consumer acceptance of GM foods in Hungary. In general, the level of knowledge on biotechnology is rather mixed, that's why the Hungarian consumers have not yet a well – defined opinion on the genetically engineered products. There is a rather low level of trust to the different institutions and economic entities, and this is a hindrance of the balanced information. The consumers with a superficial knowledge are especially vulnerable to accept extremist statements. In line with the results of other European surveys the Hungarian consumers would like to be informed on the GMO-content of products.

Results of conjoint analysis have proved, that in practical decisions the GMO-content of the products is not a primary factor yet, but the consumers would like to profit from the genetic engineering not only by the higher quality of products, but also by the lower product-prices.

**Keywords:** conjoint-analysis, consumer science, genetic engineering, survey

---

**Deák, T.:** Novel methods in food mycology – recent developments and future outlook. A review.  
Pp. 25-46. [tdeak@omega.kee.hu](mailto:tdeak@omega.kee.hu)

The significance of filamentous molds and unicellular yeasts in the safety, stability and quality of foods is widely recognized. They play an important role both in the production and the spoilage of food products, hence their detection, enumeration, isolation and identification are a basic necessity to monitor manufacturing practices and assess the quality of products. The traditional cultivation methods for fungi are slow and less reliable, and more rapid and specific methods are required to get adequate quantitative and qualitative information about their occurrence during processing and in the end-product. In the last decades several alternative and rapid mycological methods have been developed. This review gives an update of recent advancement and improvement of this field of methodology based on the survey of recent literature. The techniques are treated under the following headings: (i) modified cultivation methods, (ii) direct counting, (iii) physical detection methods, (iv) chemical methods, (v) immunological methods, and (vi) molecular techniques. The advantages and disadvantages of methods are critically evaluated and selected examples of application are cited. An outlook of future trends in methodological development is presented.

**Keywords:** Rapid and non-traditional methods, immunological methods, molecular techniques, detection, enumeration, identification, fungi, yeasts, moulds

---

**Hajós, Gy., Szabó, E., Farkas, J.:** High pressure effects on structure and immunological cross-reactivity of meat proteins.

Pp. 47-54. [gy.hajos@cfri.hu](mailto:gy.hajos@cfri.hu)

High hydrostatic pressure (HHP) processing is one of the main emerging preservation technologies with more prospects nowadays in the meat industry. Raw batter of a typical Hungarian fermented sausage has been subjected to a hydrostatic pressure treatment of 600 MPa for 20 min in a Stansted „Food Lab 900” equipment. Pressurisation altered both the electrophoretic and the immunoreactive profiles of the urea soluble protein fractions of sausage batter, mainly in the molecular weight region of 34–50 kDa and in the isoelectric point region of pI: 6–9, causing both complete disappearance of several proteins and the appearance of low molecular weight proteins. According to our results, high pressure induces conformational changes in the pork batter’s proteins with alteration of some of the epitope structures. New studies are envisaged to estimate the pressure-induced alteration in the immunological cross-reactivity that is in the structure and biological activity of meat proteins for improving the nutritional quality of the high pressure treated foods.

**Keywords:** high pressure, sausage batter, meat proteins, 2D-electrophoresis, immunoreactivity

---

**Salgó, A., Gergely, Sz.:** Characterizing the status of water during maturation and germination processes in wheat.

Pp. 55-66. [salgo@mail.bme.hu](mailto:salgo@mail.bme.hu)

During the physiological processes like maturation and germination the amount and variation in content of different water forms were changed intensively. The status of water was strongly influenced by the formation and mobilization of various storage materials, metabolites and also by hydration/dehydration processes. The changes in absorption of the characteristic water bands in near infrared (NIR) region were analysed in order to predict the amount and character of water in different phases of physiological anabolic and catabolic processes. It was confirmed that the most sensitive indicator for measurement the status of moisture was the combination band of water between 1890–1920 nm. The free to bound “transition” of water character can be followed in NIR spectra at various wavelengths (1890–1920, 1390–1420, 1140–1160 nm) with different sensitivity. NIR spectroscopic methods have a potential sensitive enough to monitor the physiological processes non-destructively in plant tissues.

**Keywords:** seed development, water, wheat, maturation, germination, near infrared (NIR) spectroscopy

---

**Beczner, J., Vidács, I., Szerdahelyi, E., Fornberg-Broczek, M.:** The effect of irradiation, heat and high hydrostatic pressure on bacterial spores.

Pp. 67-78. [j.beczner@cfri.hu](mailto:j.beczner@cfri.hu)

The effect of irradiation (1, 3 and 5 kGy) and/or hydrostatic pressure (HP, 300, 300+500 and 1100 MPa) on spores of Gram-positive bacteria *Bacillus cereus* T and *Clostridium sporogenes* PA 3679 was investigated. The spores of *B. cereus* were more sensitive to the single and combined treatments, than those of the *C. sporogenes*. The spore count of *B. cereus* decreased as a function of radiation and HP treatment. The repeated HP treatment does not enhance the inactivation of spores. The effect of combined treatments was additive, except for

combination of 3 kGy and 1100 MPa (and to a small extent the pulsing pressurisation) (synergy). The effect of treatments on spores of *C. sporogenes* was mild and additive in each combination.

Experiments with *Bacillus cereus* T proved the sensitising effect of irradiation to a subsequent heat treatment. The electrophoretic investigations showed that both irradiation and irradiation + heat treatment caused qualitative and quantitative changes in the water-soluble protein fractions of the spores.

**Keywords:** heat, irradiation, high pressure, *Bacillus cereus*, *Clostridium sporogenes*, spores