

**Editorial: Mälkki, Y.:** Dietary fiber –achievements, confusion and challenges. pp. 315-317.  
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**Atasever, M., Ceylan, Z.G., Alisarli, M.:** Changes in the sensory, microbiological and compositional properties of Turkish white cheese during ripening. pp. 319-326.  
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Results of the chemical, microbiological, and sensorial properties of Turkish white cheese samples are presented during ripening period.

It was observed that dry matter, fat, sodium chloride, ash and acidity increased during the ripening period, whereas pH value decreased. Dry matter, fat in dry matter, salt in dry matter, ash in dry matter and acidity (lactic acid) contents of cheese samples were found between 35,41-39,48%, 42,54-46,10%, 10,80-11,46%, 12,33-13,49%, and 0,61-1.11%, respectively. The pH values were found between 4,98-5,68.

Also, high counts of total mesophilic bacteria and Lactobacilli were recorded throughout ripening of the cheese. Low pH levels and high NaCl content after 30 days affected the growth of most microbial groups resulting in considerably lower counts at 3 months.

Lactobacilli constituted the dominant microflora of the cheese. According to sensory evaluations, the cheese samples were more preferred with aging.

This study reported here describes chemical, microbiological and organoleptical changes which occurred during ripening of Turkish white cheese.

**Keywords:** Turkish white cheese, quality, microorganisms, properties.

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**Pardo, A., De Juan, J.A., Pardo, J.E.:** Bacterial activity in different types of casing during mushroom cultivation (*Agaricus bisporus* (Lange) Imbach). pp. 327-342.  
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The influence of casing type and raking on the behaviour of bacterial populations during the growth cycle of mushroom (*Agaricus bisporus* (Lange) Imbach) was studied. After the induction of fructification there was a significant increase in the total bacterial count except in the casing containing composted vine shoots. These high counts were maintained after the second flush in most cases. The count of fluorescent pseudomonads also increased after the casing was added until the induction of fructification and remained high or decreased after the second flush. The results point to a significant ( $P \leq 0.05$ ) interaction between casing type and raking as regards total bacteria and fluorescent pseudomonads in all three experiments both after the induction of fructification and after the second flush.

**Keywords:** bacteria, casing, fluorescent pseudomonads, mushroom

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**Toth-Markus, M., Magyar, I., Kardos, K., Bánszky, L., Maráz, A.:** Study of Tokaji aszú wine flavour by solid phase microextraction method. Pp. 343-354. [m.toth@cfri.hu](mailto:m.toth@cfri.hu)

In this study the role of different yeast strains in the production of volatile flavour components of Tokaji Aszú wine was tested. The effect of a *Saccharomyces cerevisiae* starter and that of the typical endogenous *Candida stellata* strain as well as spontaneous fermentation was studied and compared. For the fast comparison of aroma profile, a solid phase microextraction (SPME) sampling and a GC-MS separation and identification was used. Thirty of the present compounds were selected to characterise the changes of flavour. Significant differences were found between wines fermented with different yeast strains. Application of a *Saccharomyces cerevisiae* starter alone accelerated the fermentation but this caused only little change in the aroma profile and content. *Candida stellata* contributed weakly to the production of aroma, especially to that of the longer carbon chain ethyl esters. Characteristic compounds of aged wine were detected in bottle aged Tokaji Aszú. The change of aroma profile as a function of bottle storage time was studied. The concentrations of vitispirane, trimethyl dihydronaphthalene, 2-phenylethanol and diethyl succinate were growing in the course of ageing time while those of 3-methyl-butyl acetate, ethyl hexanoate, ethyl octanoate, ethyl decanoate and ethyl dodecanoate decreased.

**Keywords:** Gas chromatography - mass spectrometry, solid phase microextraction (SPME), aroma compounds, wine, Tokaji Aszú, yeast

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**Diehl, J.F.:** Some established facts and some new concepts in food toxicology. A review. Pp. 355-369. [J.F.Diehl@t-online.de](mailto:J.F.Diehl@t-online.de)

According to widespread public opinion, environmental contaminants and food additives are major chemical hazards in food. In contrast, scientific evidence shows that levels of environmental contaminants, such as heavy metals or residues of pesticides, have greatly decreased in the last three decades and are much below the tolerable limits; food additives are strictly regulated and their proper use justifies no food safety concerns. The concept that a „de minimis” value or a Threshold of Toxicological Concern (TTC) can be identified for any chemical is gaining ground in food toxicology. The popular belief that compounds of natural origin are intrinsically safer than synthetic ones is not supported by scientific evidence. - Nutrition oriented cancer research in the past was preoccupied with the idea that food contained manmade carcinogenic substances. Their detection and elimination was thought to reduce and perhaps avoid the risk of cancer. A paradigmatic change has occurred: from the hunt for carcinogenic chemicals in food, research has moved to the study of food constituents preventing cancer and to their mechanism of action. The occurrence of health-promoting food constituents forms the basis of the present interest in „functional foods”. However, criminal actions leading to hazardous contamination of food do occur, the Spanish oil catastrophe of 1981 being an extreme example of this. Continued vigilance will be required to protect consumers from unsafe products.

**Keywords:** food contaminants, food additives, natural toxicants, food safety

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**Bobbio, F.O., Bobbio, P.A., Oliveira, P.A., Fadelli, S.:** Stability and stabilization of the anthocyanins from *Euterpe oleracea* Mart. Pp. 371-377. [Paulo@dglnet.com.br](mailto:Paulo@dglnet.com.br)

The effect of light on the stability and stabilisation of anthocyanins isolated from freeze-dried aqueous extracts of fruits of *Euterpe oleracea* were studied, using crude and purified extracts at pH 2.2. and 3.0. Crude extract was 80.0 times more stable than the purified one at pH 2.2

and 24.3 at pH 3.0. Stabilisation with tannic acid was attempted and resulted in 65 % half-life increase of the anthocyanins of the crude and a considerable half-life increase (610 %) of the purified one.

**Keywords:** anthocyanins, acaí, Euterpe oleracea, stability

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**Pálmai, M., Buchanan, R.:** The effect of *Lactococcus lactis* on the growth characteristics of *Listeria monocytogenes* in alfalfa sprout broth. Pp. 379-392. [mpalmai@axelero.hu](mailto:mpalmai@axelero.hu)

Lactic acid bacteria isolated from commercially produced alfalfa sprouts were screened for activity against *Listeria monocytogenes* F4258. Most active isolates were identified as *Lactococcus lactis* spp *lactis*. The isolates fell into two categories, strains that inhibited by acid production only, and strains that appeared to have additional inhibitory activity. An acid-only isolate, SP26, was used to evaluate the effect of initial pH (5, 6, 7, 8) and temperature (10, 20, and 30 °C) on the interaction between the lactic acid bacterium and *L. monocytogenes* using „sprout juice” as a model system. The model system was inoculated with an initial level of approx. 10<sup>3</sup> CFU ml<sup>-1</sup> *L. monocytogenes* in both mono-culture controls and the co-cultures and the co-cultures with *L. lactis* (10<sup>3</sup>–10<sup>4</sup> CFU ml<sup>-1</sup>). The primary inhibitory effect attributable to *L. lactis* was a 2 to 3 log cycle decrease in the maximum population density obtained by *L. monocytogenes*. The extent of the inhibition was decreased at 10 °C, but was only slightly affected by pH in the range of 6.0 to 8.0. *L. monocytogenes* did not grow in the sprout broth at pH 5.0 at any of the incubation temperatures.

**Keywords:** *Listeria monocytogenes*, competition, pH, alfalfa sprouts

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**Varga, E., Maráz, A.:** Yeast cells as sources of essential microelements and vitamins B1 and B2. pp. 393-405. [amaraz@omega.kee.hu](mailto:amaraz@omega.kee.hu)

Baker's yeast (*Saccharomyces cerevisiae*-Sz1) enriched in chromium, iron, selenium or zinc was prepared by shaken cultivation and laboratory fermentation. Determination of the cellular distribution of microelements indicated that a considerable portion (68-88%) was bound to the cell constituents, a very little part was solved only in the cytosol and vacuole. More than half of the original vitamins B content has been lost during the general guarantee time (12 months) and the microelements had only little influence on it. Enrichment of yeast cells with iron was accompanied by considerable increase in vitamin B2 content. Ascorbic acid as an antioxidant additive decomposed very rapidly during storage, while tocopherol proved quite stable in the non-enriched yeast prep. Selenium enrichment did not affect the inactivation of ascorbic acid, while it accelerated the decomposition of tocopherol significantly.

**Keywords:** yeast, microelements, vitamins B1 and B2, ascorbic acid, tocopherol

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**Nagy-Gasztonyi, M., Biekman, E., Krebbers, B.:** Working up a lactofermented vegetable product. Pp. 407-412. [m.gasztonyi@cfri.hu](mailto:m.gasztonyi@cfri.hu)

The combination of lactofermentation and enzyme-treatment (Rohament-PL as endo-polygalacturonase, and the mixture of Rohament-PL and Rohalase 7069 as cellulase) of sliced

carrot and orange juice resulted in a homogeneous product, with pleasant organoleptic features, after 18 h fermentation period. Two ways of inoculation were applied with *Lactobacillus plantarum*. The addition of Rohament-PL, even at 150 mgkg<sup>-1</sup> concentration, simultaneous inoculation with *Lactobacillus plantarum* (circumstances: 28 oC, 80 r.p.m. shaking) promoted the growth of lactobacilli. By 42 h fermentation time LAB count increased up to 3.2-4.8 x 10<sup>9</sup>cm<sup>-3</sup>. Furthermore the surface colour of the samples was more intensive (higher L-, a- and b- values) than without *Lactobacillus plantarum* inoculation. The application of Rohament-PL (50-100 mgkg<sup>-1</sup>) resulted in a homogeneous carrot puree, the combination Rohament-PL (150 mgkg<sup>-1</sup>) and Rohalase 7069 (150 mgkg<sup>-1</sup>) in the process gave a more liquid product, as the lower specific viscosity values proved.

**Keywords:** lactofermentation, pectolytic enzymes, LAB count, specific viscosity

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Book review