

Abstracts and Links to Papers of Interest from Other Journals

This section contains abstracts as well as titles and links to recent papers published in a number of Journals considered of interest to our readers. Internet links are given when Journals have abstracts available on-line at no charge.

ABSTRACT COMMITTEE 2004

Chair: R.E. Wheeler

Members: G. Bathgate, I. Campbell, K.-U. Heyse,
F. Jack, I. Russell, R. Stevens and G.G. Stewart

Abstract Briefs from *Monatsschrift für Brauwissenschaft*

Determination of aging relevant substances in beer by solid phase microextraction/capillary gas chromatography (SPME/GC). L. Göbl and H.U. Meisch. *Monatsschrift für Brauwissenschaft* 57, September/October 2004, 56–60.

A microanalytical method is described that enables the quantitative determination of a whole spectrum of aging relevant carbonyl components in beer. The carbonyls are separated from the beer matrix using the headspace-SPME-technique, and are determined by gas chromatography after derivatization on the headspace-SPME-fiber.

Raw Materials

Comparison of infection with fusarium head blight and accumulation of mycotoxins in grain of hullless and covered barley. L. Legzdina and H. Buerstmayr. *Journal of Cereal Science*, Vol. 40 (1), July 2004, pp. 61–67.

The full abstract of this paper can be found at

www.sciencedirect.com

Microbiology

Ochratoxin A removal in synthetic and natural grape juices by selected oenological *Saccharomyces cerevisiae* strains. H. Bejaoui, F. Mathieu, P. Taillandier and A. Lebrihi. *Journal of Applied Microbiology*, 2004, 97, 1038–1044.

Since grape juice can have a low level of ochratoxin A, chemical or physical removal is practised when necessary. This paper reports the biological degradation of the toxin by yeast strains.

IC

Genetic marker for differentiating beer-spoilage ability of *Lactobacillus paracollinoides* strains. K. Suzuki, K. Ozaki and Y. Yamashita. *Journal of Applied Microbiology*, 2004, 97, 712–718.

Although *L. paracollinoides* was recently identified as a novel beer-spoilage species, not all strains have that ability. A plasmid-associated open reading frame (ORF5) was found to be related to beer spoilage ability.

IC

Growth and fermentation patterns of *Saccharomyces cerevisiae* under different ammonium concentrations and its implications in the winemaking industry.

A. Mendes-Ferreira, A. Mendes-Faia and C. Leao. *Journal of Applied Microbiology*, 2004, 97, 540–545.

Fermentation by a wine strain of *S. cerevisiae* in a simulated grape juice medium, but with glucose as sole carbon source, was improved by addition of $(\text{NH}_4)_2\text{SO}_4$ or $(\text{NH}_4)_2\text{HPO}_4$ up to 267 mg N/litre. Lower N levels were enough for yeast growth, but caused a slow or incomplete fermentation.

IC

The role of indigenous yeasts in traditional Irish cider fermentations. W. F. Morrissey, B. Davenport, A. Querol, A. D. W. Dobson. *Journal of Applied Microbiology*, 2004, 97, 647–655.

The successive yeast species involved in a “natural” cider fermentation were identified by a PCR method, and the growth rates of the various *Brettanomyces*, *Hanseniaspora*, *Metschnikowia*, *Pichia*, *Saccharomyces* and *Saccharomycodes* species were compared.

IC

Glucose and sucrose: hazardous fast-food for industrial yeast? K.J. Verstrepen, D. Iserentant, P. Malcorps, G. Derdelinckx, P. Van Dijck, J. Winderickx, I.S. Pretorius, J.M. Thevelein and F.R. Delvaux. *Trends in Biotechnology*, 22(10), 2004, pp. 531–537.

In this review the authors summarise the role of the two best known glucose triggered signaling cascades in *S.*

cerevisiae: the main glucose repression pathway, (also known as the catabolite repression pathway) and the Ras/cAMP/protein kinase A (PKA) pathway. The role and implications of sugar signaling in industrial yeast based processes is considered.

The full abstract of this paper can be found at

www.sciencedirect.com

IR

Origins of variation in the fungal cell surface. Kevin J. Verstrepen, Todd B. Reynolds and Gerald R. Fink. 2004. *Nature Reviews Microbiology* 2, 533–540.

This review examines the genetic mechanisms that underlie fungal adhesion to surfaces. The authors propose a common mechanism for the generation of diversity among fungal adhesins. They suggest that amplification and contraction of the repeats found in the adhesin genes creates the diversity seen in these proteins. *Saccharomyces cerevisiae* is ideally suited to studying the structure and function of adhesin-family genes. There are five adhesin genes, known as *FLO* genes, in *S. cerevisiae*, although only one allele is usually expressed. The chromosomal locations of each of the *FLO* genes and the phenotypes associated with their overexpression are described. The authors discuss the roles that the adhesin loci of *S. cerevisiae* have in the establishment and maintenance of fungal biofilms and in *Candida* spp. with infection.

The full abstract of this paper can be found at

<http://www.nature.com/nrmicro/>

IR

The impact of the physiological condition of the pitching yeast on beer flavour stability: an industrial approach. L.F. Guido, P.G. Rodrigues, J.A. Rodrigues, C.R. Gonzales and A.A. Barros. *Food Chemistry*, Vol. 87 (2) September 2004, pp. 187–193.

A link to the full abstract of this paper can be found at

www.sciencedirect.com

Beer

Flavour Evaluation Methodology

Prediction of the sensory quality of canned beer as determined by oxygen concentration, physical chemistry contents, and storage conditions. O. Corzo and N. Bracho. *Journal of Food Science*, 69 (7), 2004, pp. 285–289.

The objective of the research was to predict sensory characteristics of canned beer related to its oxygen concentration, composition, and temperature and time intervals of storage. The original oxygen content, and levels of carbon dioxide, pH, color, turbidity, thiobarbituric acid and bitterness were evaluated over 16 weeks and 3 storage temperatures. The results suggested that sensory characteristics can be predicted by instrumental measures and storage conditions.

FJ/REW

Chemistry

Photooxidative degradation of beer bittering principles: product analysis with respect to lightstruck flavour formation. Kevin Huvaere, Bart Sinnaeve, Jan Van Bocxlaer and Denis De Keukeleire. *Photochemical & Photobiological Sciences*, 2004, 3 (9), pp. 854–858.

This article discusses how isohumulones, the main bittering agents in beer, are decomposed by light-induced reactions, thereby leading to radical precursors on the pathway to lightstruck flavour formation. Excited flavins, formed on visible-light irradiation, readily interact with isohumulones, as well as with reduced and oxidized derivatives thereof. From identification of both volatile and non-volatile reaction products thus formed, the authors propose feasible degradation mechanisms.

IR

Master Brewers Association of the Americas Technical Quarterly

Volume 41 (3) and Volume 41 (4) 2004

Links to the full abstracts of these papers can be found at

<http://www.mbaa.com/TechQuarterly/>

Barley beta-glucans and their degradation during malting and brewing. Yu-Lai Jin, R. Alex Speers, Allan T. Paulson and Robert J. Stewart. *MBAA TQ* 41(3), 2004, pp. 231–240.

Shear rates during brewing operations. R. A. Speers, S. J. J. Patelakis, A. T. Paulson and R. Oonsivilai. *MBAA TQ* 41(3), 2004, pp. 241–247

Arabinoxylans and their behavior during malting and brewing. A. Egi, R. A. Speers and P. B. Schwarz. *MBAA TQ* 41(3), 2004, pp. 248–267.

The physical behavior of arabinoxylans in model brewing solutions. A. Egi, R. A. Speers and A. T. Paulson. *MBAA TQ* 41(3), 2004, pp. 268–276.

Vitaltitration: a new method for assessment of yeast vitality. Pedro Gonçalves Rodrigues, A. A. Barros, J. A. Rodrigues, A. A. Ferreira, C. Gonçalves and J. R. M. Hammond. *MBAA TQ* 41(3), 2004, pp. 277–281.

The impact of fermentation temperature on yeast reductase activity. Petr Vesely, Dick Duncombe, Lance Lusk, Gabriela Basarova, John Seabrooks and David Ryder. *MBAA TQ* 41(3), 2004, pp. 282–292.

Impact of esterase activity in aseptically packaged, un-pasteurized beer. Petr Vesely, Antonia Volgyi, Lance T. Lusk, Gabriela Basarova, Alfonso Navarro, John Seabrooks and David Ryder. *MBAA TQ* 41(3), 2004, pp. 293–297.

Evaluation of the addition of gallotannins to the brewing liquor for the improvement of the flavor stability of beer. Guido Aerts, Luc De Cooman, Gert De Rouck, Zoltan Péntzes, Annemie De Buck, Roger Mussche and Joseph van Waesberghe. *MBAA TQ* 41(3), 2004, pp. 298–304.

The influence of malt acrospires on beer taste and foam quality. Nobuo Tada, Takako Inui, Norihiko Kageyama, Seisuke Takaoka and Yasutsugu Kawasaki. *MBAA TQ* 41(3), 2004, pp. 305–309.

New development for measuring hydrogen sulfide during brewing – preliminary data. Seung K. Park and Ji Yoon Kim. *MBAA TQ* 41(3), 2004, pp. 310–316.

Influence of wort boiling and wort clarification conditions on cardboard flavor in beer. Masaaki Yano, Masatoshi Morikawa, Tetsuji Yasui, Yutaka Ogawa and Motoo Ohkochi. *MBAA TQ* 41(3), 2004, pp. 317–320.

The interaction between malt protein quality and brewing conditions and their impact on beer colloidal stability. Louise H. Robinson, D. Evan Evans, Anu Kaukovirta-Norja, Arvi Vilpola, Peter Aldred and Silja Home. *MBAA TQ* 41(4), 2004, pp. 353–362.

Life cycle inventory analysis of a beer production process. Yuji Takamoto, Yutaka Mitani, Masachika Takashio, Kentaro Itoi and Katsuhiko Muroyama. *MBAA TQ* 41(4), 2004, pp. 363–365.

Servomyces – a biological nutrient. Tobias Fischborn, James McLaren, Eberhard Geiger, Fritz Briem, Karl Glas and Joseph Engelmann. *MBAA TQ* 41(4), 2004, pp. 366–370.

Investigation of material characteristics and influence on beer final filtration. John D. Brantley and Joe Kinsey. *MBAA TQ* 41(4), 2004, pp. 371–373.

Specific process units for temperature-dependent process evaluation in brewing. Jan Savel. *MBAA TQ* 41(4), 2004, pp. 374–378.

The effect of microporous membrane filtration on beer foam stability. Peter Riddell and Andrew Kelly. *MBAA TQ* 41(4), 2004, pp. 379–385.

Malting studies of some selected brewing sorghum varieties. E. O. Ogu, F. J. C. Odibo, R. C. Agu, and G. H. Palmer. *MBAA TQ* 41(4), 2004, pp. 386–389.

The benefits of washing barley with hot water: a preliminary study. Dennis E. Briggs. *MBAA TQ* 41(4), 2004, pp. 390–393.

Biogas generation from brewery wastes: demonstration at a laboratory scale. Kanagasooriyam Kanagachandran. *MBAA TQ* 41(4), 2004, pp. 394–397.

The antimicrobial activity of Nigerian medicinal plants potentially usable as hop substitutes. A. A. Oshodi, Isiaka A. Amoo and Afolabi F. Eleyinmi. *MBAA TQ* 41(4), 2004, pp. 398–402.

Evaluation of the hopping potential of blends of *Vernonia amygdalina*, *Garcinia kola*, and *Gongronema latifolium* on sorghum lager beer quality and acceptability. Afolabi F. Eleyinmi, Isiaka A. Amoo, A.A. Oshodi and Adeniran Hezekiah. *MBAA TQ* 41(4), 2004, pp. 403–407.

Journal of the American Society of Brewing Chemists

Volume 62 (4) 2004

Links to the full abstracts of these papers can be found at <http://www.asbcnet.org/Journal/>

The effects of wort valine concentration on the total diacetyl profile and levels late in batch fermentations with brewing yeast *Saccharomyces carlsbergensis*. E. E. Petersen, A. Margaritis, R. J. Stewart, P. H. Pilkington, and N. A. Mensour. *JASBC*, Vol. 62(4), pp. 131–139.

Production of lager beer from sorghum malt and waxy grits. M. T. O. Villicaña and S. O. S. Saldivar. *JASBC*, Vol. 62(4), pp. 140–146.

Preharvest sprouting in the 2002 midwestern barley crop: occurrence and assessment of methodology. P. Schwarz, C. Henson, R. Horsley, and H. McNamara. *JASBC*, Vol. 62(4), pp. 147–154.

Effects of beta-glucans, shearing, and environmental factors on wort filtration performance. Y.-L. Jin, R. A. Speers, A. T. Paulson and R. J. Stewart. *JASBC*, Vol. 62(4), pp. 155–162.

Determination of beer color using image analysis. S. Fengxia, C. Yuwen, Z. Zhanming and Y. Yifeng. *JASBC*, Vol. 62(4), pp. 163–167.

Technical Committee and Subcommittee Reports

2003–2004 Report of the technical committee. *JASBC*, Vol. 62(4), pp. 168–169.

Coordination of new and alternate methods of analysis. *JASBC*, Vol. 62(4), pp. 170–172.

Soluble starch. *JASBC*, Vol. 62(4), pp. 173–174.

Determination of hop essential oils by capillary gas chromatography. *JASBC*, Vol. 62(4), pp. 175–181.

Method for measurement of yeast vitality. *JASBC*, Vol. 62(4), pp. 182–183.

Method for measurement of yeast viability by fluorescent staining. *JASBC*, Vol. 62(4), pp. 184–189.

Elemental analysis of beer and wort by inductively coupled plasma-atomic emission spectroscopy. *JASBC*, Vol. 62(4), pp. 190–194.

Evaluation of the Anton PAAR Alcolyzer for measurement of alcohol and original gravity. *JASBC*, Vol. 62(4), pp. 195–198.

Method of wort preparation for the determination of color. *JASBC*, Vol. 62(4), pp. 199–201.

Method for reference standard for total package oxygen. *JASBC*, Vol. 62(4), pp. 202–203.

Spectrophotometric analysis of proteins in hopped wort and beer. *JASBC*, Vol. 62(4), pp. 204–206.

Sprout damage by pearling method. *JASBC*, Vol. 62(4), pp. 207–210.

JOURNAL OF THE INSTITUTE OF BREWING
(An Institute & Guild of Brewing publication)

ORDER FORM

ANNUAL SUBSCRIPTION

£200 per year starting with issue

NAME AND ADDRESS (Block Capitals)

.....
.....
.....
.....

Remittance to be enclosed with order (overseas readers please use Sterling draft on UK Bank). Credit card payments may be made over the telephone.



The Institute & Guild of Brewing
33 Clarges Street, London W1J 7EE, UK
Tel: +44 (0) 20 7499 8144 Fax: +44 (0) 20 7499 1156
e-mail: enquiries@igb.org.uk website: www.igb.org.uk

REGISTERED CHARITY No. 269830