

Yeast

A Newsletter for Persons Interested in Yeast

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J.A. Barnett, Norwich, England	1	G. Kunze, Gaterleben, Germany	9
A. Caridi, Gallina, Italy	2	M.A. Lachance, London, Ontario, Canada	10
L. Olsson, Lyngby, Denmark	2	Obituary	11
E. Minárik, Bratislava, Slovakia	4	International Commission on Yeasts	11
G.I. Naumov and E.S. Naumova, Moscow, Russia	4	Recent event	11
Á. Fonseca and J.P. Sampaio, Caparica, Portugal	5	Forthcoming meetings	12
A. Speers, Halifax, Nova Scotia, Canada	6	Brief News Items	12
J. du Preez, Bloemfontein, South Africa	7	Publication of Interest	13

Editorials

International surface post rate no longer available

Due to a recent review of rates by Canada Post, the preferential prices for "international surface" and "printed papers" will no longer be available. A uniform subscription rate of USD\$12.00 will therefore be implemented for all mailings outside Canada or the USA. Readers who have paid in advance will continue to receive mailings at the old rate until their current credit runs out. Readers who have not yet paid their subscription for 2004 should remit the new airmail rate, which came into effect in January 2004.

Electronic format

A number of readers have enquired about the possibility of making the Yeast Newsletter available electronically. Before making a decision on this matter, I seek feedback from more readers. I therefore request that you kindly fill the questionnaire included at the end of this issue and return it to me.

M. A. Lachance
Editor

I. Russian Collection of Microorganisms (VKM), Institute for Biochemistry and Physiology of Microorganisms, Russian Academy of Sciences, Pushchino 142292, Russia. Communicated by W.I. Golubev <wig@ibpm.pushchino.ru>.

Recent publications.

1. Golubev WI and Golubev NW 2003. A new basidiomycetous yeast species, *Cryptococcus mycelialis* related to *Holtermannia* Saccardo et Traverso. *Mikrobiologiya* 72(6):822-827.

A new species of the genus *Cryptococcus* was described on a basis of taxonomic study of four strains isolated from samples collected on South Georgia and East Falkland islands. This species differs from known *Cryptococcus* spp. in the formation monokaryotic mycelium with pseudoclamps and

haustoria. *Cryptococcus mycelialis* sp. nov. with the type strain VKM Y-2863 can be distinguished from phylogenetically related and phenotypically similar *Holtermannia corniformis* and *Cr. nyarrowii* cultures by some assimilation properties, maximum temperature for growth and sensitivity to mycocins.

2. Pfeiffer I, Fejfar A, Kucsera, J and Golubev W 2003 Diversity of DNA plasmids in some psychrophilic yeast species. *Acta Microbiol Immunol Hung* 50(2-3):164.
3. Fejfar, A, Kucsera, J and Golubev WI 2003 Extrachromosomal DNAs in yeasts isolated from spring sapwood fluxes. *Abstr 1st FEMS Congr European Microbiologists (Slovenia, Ljubljana, June 29-July 3, 2003)*, 203-204 (P4-62).
4. Golubev, WI and Golubev, NW 2004. Selection and characterization of yeasts that ferment lactose vigorously. *Prikladnaya Biokhimiya i Mikrobiologiya* 40:332-336.

Whey-fermenting *Kluyveromyces* cultures were revealed among 105 yeast strains from the Russia Collection of Microorganisms (VKM, <http://www.vkm.ru>). The most active eighteen strains (all were isolated from dairy products) fermented galactose, sucrose, raffinose, in addition to lactose. and also

many of them did inulin. Most of these strains were resistant to cycloheximide grew at 41 C, in media containing 50%, 11-12% NaCl, 10-12 vol% ethanol. Three strains had mycocinogenic activity. After 2-3 days whey fermentation (10% lactose, 30°C) the strains selected were capable of producing 4-5 vol% alcohol.

5. Sampaio JP, Golubev WI, Fell JW and Golubev NW 2004 *Curvibasidium cygneicollum* gen. nov., sp. nov., *Curvibasidium pallidicorallinum* sp. nov., novel taxa in the Microbotryomycetidae (Uredinomyces) and their relationship with *Rhodotorula fujisanensis* and *Rhodotorula nothofagi*. *Int J System Evol Microbiol* (in press).

Strains of *Rh. fujisanensis*, including the type strain, are sexually compatible and produce clamped mycelium with teliospores. In the present report the basidial stage of *Rh. fujisanensis* is characterized. The study of another sexual stage obtained using isolates preliminary identified as *Rh. nothofagi*, a species closely related to *Rh. fujisanensis*, is also presented. The new data were evaluated using several criteria,

including the molecular phylogenetic framework available for the Microbotryomycetidae. The new genus *Curvibasidium* is described to accommodate two teleomorphs: *C. cygneicollum* (CBS 4551T), which is described as the sexual stage of *Rh. fujisanensis*, and *C. pallidicorallinum* (CBS 9091T) that is closely related to *Rh. nothofagi* but does not represent its sexual stage.

II. School of Biological Science, University of East Anglia, Norwich NR4 7TJ, England. Communicated by J.A. Barnett <J. Barnett@uea.ac.uk>.

Current publications.

1. Barnett JA 2004 A history of research on yeasts 7: enzymic adaptation and regulation. *Yeast* 21 (in the press).
 2. Barnett JA 2004 Glucose catabolism in yeast and muscle. *Comprehensive Biochemistry* 44 (in the press).
 3. Barnett JA & van der Walt JP 2004 A history of research on yeasts 8: taxonomy. *Yeast* (in preparation).
 4. Barnett JA & Entian KD 2005 A history of research on yeasts 9: metabolic regulation. *Yeast* (in preparation).
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III. Dipartimento di Scienze e Tecnologie Agro-Forestali e Ambientali, Università di Reggio Calabria, Piazza San Francesco 7, I-89061 Gallina (RC), Italia. Communicated by A. Caridi <acaridi@unirc.it>.

Recent publications.

1. Caridi A, Cufari A, Lovino R, Palumbo R, Tedesco I 2004 Influence of yeast on polyphenol composition of wine. *Food Technol Biotechnol* **42**:37-40.

Two strains of *Saccharomyces cerevisiae* were employed for winemaking of must from red grapes. Twenty-two parameters were determined in the red wines produced. Very significant ($p < 0.01$) differences were observed for colour

intensity, total polyphenols, and non-anthocyanic flavonoids. Moreover, significant ($p < 0.05$) differences were observed for colour and monomeric anthocyanins.

2. Caridi A 2004 Physiologically characterized yeasts isolated from raw milks and raw milk cheeses. IDF Symposium on Cheese: Ripening, Characterization & Technology, Prague (Czech Republic), P117, pp.105-106, 21-25 March 2004.

Countries of the Mediterranean area are characterized by production of artisanal cheeses, obtained from goat, sheep, cow and buffalo raw milk. The numbers and species of yeasts in the different cheeses are variable, but some species are more frequently detected than others. Despite the frequent occurrences of yeasts in many dairy products, it is not generally accepted that these yeasts contribute significantly to the quality of the final product. In the present work, 205 strains of Calabrian yeasts isolated from four samples of goats' milk, six samples of ewes' milk, 22 samples of goats' cheese made from raw milk (Caprino d'Aspromonte) and nine samples of ewes' cheese made from raw milk (Pecorino del Poro) were physiologically characterized. In order to evaluate the physiological biodiversity of the dairy yeasts, the occurrence of some properties, such as the

fermentation of glucose, galactose, and lactose, the assimilation of lactic acid and citric acid, the ability to grow at different concentrations of salt (5-10-15% NaCl), and the H₂S production on BiGGY agar was examined. On the basis of these tests, only one yeast with identical characteristics and isolated from the same sample was maintained, the other strains being excluded: thus the number of dairy yeasts was reduced to 74. These isolates were further studied for their proteolytic and lipolytic activity, and for their behaviour in the presence of nine autochthonous lactic acid bacteria (six coccid-shaped and three rod-shaped LAB) using the spot-on-lawn assay in Petri plates. The potential implications of the results for further selection of the best strains as starter cultures for cheesemaking are discussed.

IV. Center for Microbial Biotechnology, BioCentrum-DTU, Building 223, The Technical University of Denmark, DK-2800 Lyngby, Denmark. Communicated by L.Olsson <lo@biocentrum.dtu.dk>.

Please note that our research center has a new name. More information about our new center can be found at www.cmb.dtu.dk.

Recent publications.

1. Bro C, J Nielsen 2004 Impact of 'Ome' analysis on inverse metabolic engineering. *Met Eng* (in press).
2. Bro C., B Regenberg, G Lagniel, J Labarre, M Montero-Lomeli, J Nielsen 2003 Transcriptional, proteomics and metabolic response to lithium in galactose-grown yeast cells. *J Biol Chem* **278**:32141-32149.
3. Bro C, B Regenberg, J Nielsen 2004 Genome-wide transcriptional response of a *Saccharomyces cerevisiae* strain with an altered redox metabolism. *Biotechnol Bioeng* **85**:269-276.
4. dos Santos MM, A K Gombert, B Christensen, L Olsson, J Nielsen 2003 Identification of *in vivo* enzyme activities in the co-metabolism of glucose and acetate by *Saccharomyces cerevisiae* using ¹³C-labeled substrates. *Eukar Cell* **2**:599-608.
5. dos Santos MM, G Thygesen, P Kötter, L Olsson, J Nielsen 2003 Aerobic physiology of redox-engineered *Saccharomyces cerevisiae* strains modified in the ammonium assimilation for increased NADPH availability. *FEMS Yeast Res* **4**:59-68.
6. Famili I, J Förster, J Nielsen, B Palsson 2003 *Saccharomyces cerevisiae* phenotypes can be predicted using constraint based analysis of a genome-scale reconstructed metabolic network. *Proc Nat Acad, Sci* **100**:13134-13139.
7. Förster J, I Famili, BØ Palsson, J Nielsen 2003 Large-scale evaluation of *in silico* gene deletions in *Saccharomyces cerevisiae*. *Omics J Integrative Biol* **7**:193-202.

8. Grotkjær T, M Åkesson, B Christensen, AK Gombert, J Nielsen 2004 Impact of transamination reactions and protein turnover on labeling dynamics in ¹³C-labelling experiments. *Biotechnol Bioeng* (in press).
 9. Lei, F, Olsson, L and SB Jørgensen 2004 Dynamics of the regulation of the respiratory system in *Saccharomyces cerevisiae*. *Biotechnol Bioeng* (accepted for publication).
 10. Lisby M, A Antunez de Mayolo, UH Mortensen & R Rothstein 2003 Cell cycle- regulated centers of DNA double-strand break repair. *Cell Cycle* **2**:479-83.
 11. Lisby M, UH Mortensen & R Rothstein 2003 Co-localization of multiple DNA double-strand breaks at a single Rad52 repair centre. *Nature Cell Biol* **5**:572-577.
 12. Lübbehüsen TL, J Nielsen, M McIntyre 2003 Characterization of the *Mucor circinelloides* life cycle by on-line image analysis. *J Appl Microbiol* **95**:1152-1160.
 13. Lübbehüsen TL, J Nielsen, M McIntyre 2003 Morphology and physiology of the dimorphic fungus *Mucor circinelloides* (syn. *M. racemosus*) during anaerobic growth. *Mycol Res* **107**:223-230.
 14. Lübbehüsen TL, J Nielsen, M McIntyre 2004 Aerobic and anaerobic ethanol production by *Mucor circinelloides* during submerged growth. *Appl Microbiol Biotechnol* **63**:543-548.
 15. Lübbehüsen TL, VG Polo, S Rossi, J Nielsen, S Moreno, M McIntyre, J Arnau 2004 Protein kinase A is involved in the control of morphology and branching during aerobic growth in *Mucor circinelloides*. *Microbiol* **150**:143-150.
 16. Møller K, C Bro, RB Langkjær, J Piskur, J Nielsen, L Olsson 2004 Regulation of pyruvate decarboxylase in the yeast *Saccharomyces kluyveri*. *Mol Genet Genomics* **270**:558-568.
 17. Møller, K, Sharif, MZ and LOlsson 2004 Production of fungal α -amylase by *Saccharomyces kluyveri* in glucose-limited cultivations. *J Biotechnol* (accepted for publication).
 18. Nielsen J 2003 It is all about metabolic fluxes. *J Bacteriol* **185**:7031-7035.
 19. Patil K, M Åkesson, J Nielsen 2004 Use of genome scale microbial models for metabolic engineering. *Curr Op Biotechnol* **15**:64-69.
 20. Roca C, J Nielsen, L Olsson 2003 Metabolic engineering of ammonium assimilation in xylose fermenting *Saccharomyces cerevisiae* improves ethanol production. *Appl Env Microbiol* **69**:4732-4736.
 21. Roca, C, Haack, M B, and L Olsson 2004 Engineering of carbon catabolite repression in recombinant xylose fermenting *Saccharomyces cerevisiae*. *Appl Microbiol Biotechnol* **63**: 578-583.
 22. Sonderegger, M, Jeppsson, M, Olsson, L, Boles, E, Spencer-Martins, I, Hahn-Hägerdal, B, and U Sauer 2003 Fermentation performance of engineered and evolved xylose-fermenting *Saccharomyces cerevisiae* strains. *Biotechnol Bioeng* (accepted for publication).
 23. Villas-Boas SG, DG Delicado, M Åkesson, J Nielsen 2003 Simultaneous analysis of amino and nonamino organic acids as methyl chloroformate derivatives using gas chromatography-mass spectrometry. *Anal Biochem* **322**:134-138.
 24. Åkesson M, J Förster, J Nielsen 2004 Integration of gene expression data into genome-scale metabolic models. *Met Eng* (in press).
- PhD thesis.
25. Christoffer Bro. Transcription analysis of the yeast *Saccharomyces cerevisiae*.
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**V. Research Institute for Viticulture and Enology, Matúškova 25, 831 01 Bratislava, Slovakia
Communicated by E. Minárik.**

Recent publications.

1. E Minárik 2004 Mannoproteins of yeast hulls and their influence on grape sine stability (summary). *Vinařský obzor* **97**:169-170 (in Slovak).

Mannoproteins of yeast hulls of *Saccharomyces cerevisiae* are released during alcoholic fermentation of grape must and wine ageing on yeasts (method "sur lies"). They contribute to biological and physico-chemical wine stability.

Special positive results were registered in wine stability against crystalline haze in wine. Some technological items of mannoprotein production of industrial scale are briefly described. The use of mannoproteins is recommended by the O.I.V, in Paris.

2. E Minárik 2004 Lysozyme activity on malolactic fermentation in grape must and wine. *Vinařský obzor* **97**:178.

Lysozyme is an efficient inhibitor of malolactic bacteria (*Oenococcus oeni*, *Lactobacillus* sp., *Pediococcus* sp.) activity. The enzyme may be regarded as a modern, high efficiency agent, by which malic acid degradation to lactic acid

may be regulated and controlled after alcoholic fermentation. In vintages with low acidity and high pH of grapes acid degradation may be interrupted or even completely stopped. The use of lysozyme has been advised by FAO, WHO, and O.I.V.

3. E Minárik 2004 Influence of nutrients and yeast vitality on improving wine quality. *Vinič a víno* 4 suppl. 4 (in Slovak).

The utilization of assimilable nitrogen by wine yeasts should always be checked. In sparkling wine production yeast strains showing weak or slow alcoholic fermentation should be used when the base wine displays sufficient yeast nutrients. The

strain should be adapted prior to inoculation to the base wine. The stimulatory effect of secondary fermentation may be supported by the addition of combined yeast hulls, ammonia salts and thiamine.

4. E Minárik 2004 Specific yeast flora composition of grapes, musts and wines in the wine-growing region of Tokay. *Vinařský obzor* **97**:81 (in Slovak).

A specific yeast flora composition of grapes and wines was found in the wine-growing region of Tokay in Slovakia and neighbouring Hungary. Unlike other viticultural regions, the yeast flora contained melibiose-fermenting yeasts

Saccharomyces bayanus var. *uvarum* (formerly *S. carlsbergensis*, *S. uvarum*) were isolated. Specific winemaking conditions in the Tokay wine-growing region after more than 25 years could be thus confirmed.

VI. State Scientific-Research Institute for Genetics and Selection of Industrial Microorganisms, I-Dorozhnyi 1, Moscow 117545, Russia. Communicated by G.I. Naumov and E.S. Naumova <gnaumov@yahoo.com>.

We are grateful to A. Querol and E. Barrio (Valencia) for a fruitful four-month visit to their labs in the frame of NATO Science Programme (Expert Visit). Many thanks to C.P. Kurtzman, K. Boundy-Mills, and S.C. Jong for the possibility to visit American culture collections NRRL, UCD and ATCC.

The following are publications for 2003-2004 or in press.

1. Naumov GI, Naumova ES, Smith MTh., de Hoog GS 2003 Ribosomal DNA sequencing and reinstatement of the genus *Arthroascus* von Arx. *J Gen Appl Microbiol* **49**:267-270.
2. Naumova ES, Naumov GI, Nosek J, Tomaška, L 2004 Differentiation of the yeasts *Williopsis*, *Zygowilliopsis* and *Komagataea* by karyotypic and PCR analyses. *System Appl Microbiol* **27**:192-197.
3. Naumov GI, Ivannikova YuV, Naumova ES 2004 Molecular polymorphism of viral dsRNA of yeast *Saccharomyces paradoxus*. *Molecular genetics, microbiology and virology (Moscow)* (in press).

Analysis of 53 strains of different geographical origin allowed us for the first time to find viral double-stranded RNA (L and M-fractions) in wild strains *Saccharomyces paradoxus* and to study their natural polymorphism. The size of L dsRNA was constant (4.5 kb), the same as in the cultured yeast

S. cerevisiae. The size of M dsRNA varied from 1.5 to 2.4 kb. In *S. paradoxus* strains we determined seven types of M dsRNA ($M_1 - M_7$), which were not connected with the source of isolation and geographical origin of the host strains.

4. Naumova ES, Gazdiev DO, Naumov GI 2004 Molecular divergence of soil yeasts *Williopsis* sensu stricto. *Microbiology (Moscow)* (submitted).

Fifty-three strains having Saturn-shaped ascospores were analyzed by PCR-restriction fragment length polymorphism (RFLP) of the ribosomal internal transcribed spacers. Using

endonucleases *HaeIII* and *MspI* we differentiated the yeasts *Williopsis* sensu stricto, *W. mucosa*, *W. salicorniae*, *Zygowilliopsis californica* and *Komagataea pratensis*. Sibling

species of *Williopsis* sensu stricto having identical restriction profiles can be clearly separated with minisatellite primer M13. The use of PCR with primer M13 allowed us to reidentify a number of museum strains, to determine species belonging of Far East Asian isolates and to find three strains which may represent

new taxa. The latter strains have unique PCR profiles and different ITS1 and ITS2 sequences. Possible contradiction between different molecular approaches in the yeast identification and classification is discussed.

5. Naumova ES, Sukhotina NN, Naumov GI 2004 Molecular genetic differentiation of the dairy yeast *Zygodafabospora/Kluyveromyces lactis* and its closest wild relatives. (submitted).

Currently accepted formal division of the *Kluyveromyces lactis* species into the two taxonomic varieties *Kl. lactis* var. *lactis* and *Kl. lactis* var. *drosophilorum* is based on phenotypic and ecological characters, only. On the other hand, the genetic hybridisation analysis and molecular karyotyping of its synonyms (type strains) allowed to reinstate them in the genus *Zygodafabospora* Kudriavzev emend G. Naumov [FEMS Yeast Res. 2(2002) 39-46] as varieties *Zf. lactis* var. *lactis*, *Zf. lactis* var. *krassilnikovii*, *Zf. lactis* var. *drosophilorum*, *Zf. lactis* var. *phaseolospora* and *Zf. lactis* var. *vanudenii*. In the present work, we studied forty *Zf. lactis* strains of different geographic and ecological origins by means of restriction analysis of the PCR-amplified non-coding nrDNA regions: intergenic spacer IGS2

and internal transcribed spacers ITS1, ITS2. The results proved the complex structure of the *Zf. lactis* species, consisting of the five varieties mentioned above. Moreover, two new genetic populations (taxa) were determined in North America ('aquatic') and Far East Asia ('oriental'). Comparative sequence analysis of the 5.8S rRNA gene and two internal transcribed spacers revealed three distinct groups within the *Zf. lactis* species. One is composed of the five varieties, and the other two include new populations 'aquatic' and 'oriental'. The sequence data are concordant with previously conducted genetic analysis and literature data on nDNA/nDNA reassociation, indicating the variety status of the *Zf. lactis* populations.

6. Naumova ES, Naumov GI, Barrio E, Querol A 2004 Molecular polymorphism of wine yeast *S. bayanus* var. *uvarum*: mtDNA restriction analysis. Int. Microbiol. (submitted).

Genetic relationships among forty-two strains of *Saccharomyces bayanus* var. *uvarum* isolated in different wine regions of Europe and four wild isolates were investigated by restriction analysis (RFLP) of mitochondrial DNA (mtDNA) with four restriction endonucleases, *AluI*, *DdeI*, *HinI* and *RsaI*. No clear correlation between origin and source of isolation of *S. bayanus* var. *uvarum* strains and their mtDNA restriction

profiles was found. On the whole, the mtDNA of *S. bayanus* var. *uvarum* is much less polymorphic than that of *S. cerevisiae*. This observation is in good agreement with results obtained by electrophoretic karyotyping. Unlike wine *S. cerevisiae*, strains of *S. bayanus* var. *uvarum* display a low level of chromosome length polymorphism.

7. Naumov GI, Sukhotina N.N, Naumova ES 2003 Novel gene pool for dairy yeasts: molecular and genetic differentiation of the complex *Zygodafabospora/Kluyveromyces lactis*. In Biotechnology: State of the Art and Prospects of Development. Proceedings of 2nd Moscow International Congress, Moscow, November 10-14, 2003, part 1, p. 238.

8. Naumova ES, Gazdiev DO, Naumov GI 2004 Genosystematics of the mycocin-forming yeasts *Williopsis*, *Zygowilliopsis* and *Komagataeae*. Advances in Medical Mycology. Vol. 3, Moscow: All-Russian National Academy of Mycology, p.7-8. (in Russian).

9. Naumov GI, Sukhotina NN, Naumova ES 2004 Molecular and genetic analysis of origin of clinical strains of *Kluyveromyces/Zygodafabospora marxiana*. Advances in Medical Mycology. Vol. 3, Moscow: All-Russian National Academy of Mycology, p. 8-9 (in Russian).

VII. CREM – Centro de Recursos Microbiológicos, Secção Autónoma de Biotecnologia, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica, Portugal. Communicated by A. Fonseca <amrf@fct.unl.pt> and J. P. <Sampaio jss@fct.unl.pt>.

The following overview was published in "Frontiers in Basidiomycete Mycology", a commemorative publication on the occasion of the 65th anniversary of Prof. Franz Oberwinkler.

1. Sampaio JP Diversity, phylogeny and classification of basidiomycetous yeasts.

Basidiomycetous yeasts are an extremely diverse assemblage of fungi. In this paper their importance as human pathogens and relevance for biotechnology, agro-industries and biological control is reviewed. The habitats of basidiomycetous yeasts are also very diverse and examples of such ecological heterogeneity are discussed. Basidiomycetous yeasts are phylogenetically related to groups of yeast-producing

basidiomycetes not traditionally studied by yeast biologists. The relationships among the whole group of dimorphic basidiomycetes are discussed in the light of Bayesian molecular phylogenetic inference. In addition, an overview of the major groups of basidiomycetous yeasts is presented and current problems in their classification are examined.

The following papers have been recently published (abstracts were included in the last issue).

2. Sampaio JP, Inácio J, Fonseca Á, Gadanho M, Spencer-Martins I, Scorzetti G and Fell JW 2004 *Auriculibuller fuscus* gen. nov., sp. nov. and *Bullera japonica* sp. nov., novel taxa in the Tremellales. *Int J Syst Evol Microbiol* **54**:987-993.
3. Inácio J, Rodrigues MG, Sobral P and Fonseca Á 2004 Characterisation and classification of phylloplane yeasts from Portugal related to the genus *Taphrina* and description of five novel *Lalaria* species. *FEMS Yeast Res* **4**:541-555.
4. Inácio J and Fonseca Á 2004 Reinstatement of *Rhodotorula colostri* (Castelli) Lodder and *Rhodotorula crocea* Shifrine & Phaff, former synonyms of *Rhodotorula aurantiaca* (Saito) Lodder. *FEMS Yeast Res* **4**:557-561.

The following papers have been accepted for publication.

5. Sampaio JP, Golubev WI, Fell JW, Gadanho M and Golubev NW *Curvibasidium cygneicollum* gen. nov., sp. nov. and *Curvibasidium pallidicorallinum* sp. nov., novel taxa in the Microbotryomycetidae (Urediniomycetes), and their relationship with *Rhodotorula fujisanensis* and *Rhodotorula nothofagi*. *Int J Syst Evol Microbiol*.

Strains of *Rhodotorula fujisanensis* (Basidiomycota, Urediniomycetes, Microbotryomycetidae), including the type strain, are sexually compatible and produce clamped mycelium with teliospores. However, since teliospore germination had not been documented, the complete sexual cycle was not known. During the course of our investigations we were able to characterize the basidial stage of *Rh. fujisanensis*. In addition, mating studies employing isolates preliminarily identified as *Rhodotorula nothofagi*, a species closely related to *Rh.*

fujisanensis, yielded mycelium with teliospores, that formed basidia and basidiospores. The new data were evaluated using several criteria, including the molecular phylogenetic framework available for the Microbotryomycetidae. The new genus *Curvibasidium* is described to accommodate two teleomorphs: *Curvibasidium cygneicollum* (CBS 4551^T), which is described as the sexual stage of *Rh. fujisanensis*, and *Curvibasidium pallidicorallinum* (CBS 9091^T) that is closely related to *Rh. nothofagi* but does not represent its sexual stage.

6. Golubev WI, Sampaio JP, Gadanho M and Golubev EW *Cryptococcus paraflavus* sp. nov. *J Gen Appl Microbiol*.
7. Tavares S, Inácio J, Fonseca Á and Oliveira C Direct detection of *Taphrina deformans* on peach trees using molecular methods. *Eur J Plant Pathol*.

The ascomycetous fungus *Taphrina deformans* is the agent of Peach Leaf Curl, a worldwide disease of peach potentially devastating to both crop yields and tree longevity. Conspicuous leaf curl symptoms result from the invasion of host tissue by the strictly parasitic mycelial phase of the *T. deformans* dimorphic life cycle. Successful isolation of the fungus in pure culture is cumbersome and limited to late spring/early summer (time of ascospore discharge from infected leaves) and only rarely has the asymptomatic yeast phase been isolated from buds. Molecular methods, namely those based on the hybridisation of nucleic acids, are advantageous for diagnostic purposes since

they do not require isolation of the fungus on culture media. Direct amplification using the Polymerase Chain Reaction (PCR) and Fluorescent *in situ* Hybridisation (FISH) were tested for diagnosis of Peach Leaf Curl disease in order to provide a fast and reliable method for disease risk assessment. Specific primers and probes were designed based on available ribosomal DNA sequence data. Positive and specific diagnoses of Peach Leaf Curl were achieved with primer TDITS1, using PCR-detection, and probe TDE634, using FISH, both on infected leaves and in washings of asymptomatic peach buds.

Dimorphic Basidiomycetes WWW project, new features: http://www.crem.fct.unl.pt/dimorphic_basidiomycetes

Dimorphic basidiomycetes described in 2000, 2001, 2002, 2003 and 2004. Includes species names, authorities and bibliographic references. The genera of dimorphic basidiomycetes. Includes the list of currently accepted species in each genus. For the polyphyletic genera the species are listed alphabetically and phylogenetically.

VIII. Department of Food Science and Technology and Canadian Institute of Fisheries Technology, Dalhousie University, P.O. Box 1000, Halifax, Nova Scotia, Canada, B3J 2X4. Communicated by A. Speers <aspeers@dal.ca>.

Recently completed work.

1. YQ Wan, RA Speers and YL Jin Effects of Fermentation Parameters and Cell Wall Properties on Yeast Flocculation.

Industrial wort was fermented with a NewFlo phenotype ale yeast in lab-scale cylindrical fermenters. The effects of various fermentation parameters and yeast cell wall

properties on yeast flocculation were studied during 120-h fermentation. The evaluation of the cell volume during the fermentation revealed a non-normal distribution ($p < 0.05$) at most

fermentation times. Overall yeast cell size initially decreased in the first 24 h of fermentation then increased during 24-60 h. Cell size then declined until the end of fermentation. These changes may reflect initial budding followed by individual cell growth and then settling of larger flocculent cells once fermenter shear forces declined. While yeast flocculation began after 24 h, most flocs remained in suspension until 60 h when the average turbulent shear rate caused by CO₂ evolution declined to below 8 s⁻¹. Both Helm's flocculence and cell surface hydrophobicity rapidly increased to high and stable values from 24 h onward. Although a significant correlation (p<0.05) was observed between zymolectin densities and cell surface area, the total

zymolectin level on yeast cell walls did not change significantly with fermentation time (p>0.05). Interestingly, no significant difference existed in Helm's flocculation values of suspended and settled yeast cells (p>0.05). Changes in orthokinetic capture coefficient (α_0) value with fermentation time, measured in fermenting worts, indicated a significant increase (p<0.001) after 24 h of fermentation. Values of α_0 in sodium acetate buffers were significantly higher (p<0.001) than that measured in fermenting worts. Results suggested that fermentable sugar level and shear force exert major influences on yeast flocculation in beer fermentation.

IX. Department of Microbial, Biochemical & Food Biotechnology / UNESCO MIRCEN, University of the Free State, P.O. Box 339, 9300 Bloemfontein, South Africa. Communicated by James du Preez <dpreezj.sc@uovs.ac.za> www.uovs.ac.za/biotech.

Dear friends: Following the merger between the faculties of Natural and Agricultural Sciences and the subsequent merger with the Dept. of Food Science in January 2002, the name of the department changed end of 2002 as indicated above. Please also note that the e-mail addresses have changed.

The following articles from our department have recently appeared, are in press or have been accepted.

2002

1. Lourens-Hattingh A and BC Viljoen 2002 Survival of dairy-associated yeasts in yoghurt and yoghurt-related products. *Food Microbiol.* **19**:597-604.
2. Lourens-Hattingh A and Viljoen BC 2002 Survival of probiotic bacteria in South African commercial bio-yoghurt. *S. Afr. J. Sci.* **98**:298-301.
3. Morakile G, Kock JLF, Van Zyl CH, Pohl CH and Viljoen BC 2002 Differentiation of brewing and related yeasts based on PCR amplification and restriction fragment length polymorphism of ribosomal DNA. *J Inst. Brew.* **108**:164-168.

2003

4. Ferreira AD and BC Viljoen 2003 Yeasts as adjunct starters in matured Cheddar cheese. *Internat. J Food Microbiol.* **86**:131-140.
5. Kock JLF, CJ Strauss, CH Pohl, and S Nigam 2003 Invited Review: The distribution of 3-hydroxy oxylipins in fungi. *Prostaglandins & other Lipid Mediators* **71**:85-96.
6. Loretan T, Mostert JF and BC Viljoen 2003 Microbial flora associated with South African household kefir. *S.A. J Science* **99**:92-94.
7. Smith DP, JLF Kock, PWJ Van Wyk, CH Pohl, E Van Heerden, PJ Botes and S Nigam 2003 Oxylipins and ascospore morphology in the ascomycetous yeast genus *Dipodascus*. *Antonie van Leeuwenhoek* **83**:317-325.
8. Strauss CJ, Kock JLF, Van Wyk PWJ, Viljoen BC, Botes PJ, Hulse G and Nigam S 2003 Inverse flocculation patterns in *Saccharomyces cerevisiae* UOFS Y-2330. *J Inst Brew.* **109**:3-7.
9. Viljoen BC, AM Knox, PH de Jager, A Lourens-Hattingh 2003 Development of yeast populations during the processing and ripening of blue veined cheese. *Food Technol Biotechnol* **41**:291-298.
10. Viljoen BC, Lourens-Hattingh A, Ikalafeng B and Peter G. 2003. Interactions between yeasts and bacteria during temperature abuse in yoghurt. *Food Res Internat.* **36**:193-197
11. Viljoen BC, R Khoury and A Lourens-Hattingh 2003 Seasonal diversity of yeasts associated with white-surface mould-ripened cheeses. *Food Res Internat* **36**:275-283
12. Kritzinger SM, Kilian SG, Potgieter MA & du Preez JC 2003 The effect of production parameters on the synthesis of the prebiotic trisaccharide, neokestose, by *Xanthophyllomyces dendrorhous* (*Phaffia rhodozyma*). *Enz Microb Technol* **32**:728-737.

13. Baretseng AS, JLF Kock, CH Pohl, EE Pretorius and PWJ Van Wyk 2004 Variation in functional ascospore parts in the ascomycetous yeast *Dipodascopsis uninucleata*. *Antonie van Leeuwenhoek* **85**:187-189.
14. Venter T, JLF Kock, PJ Botes, MS Smit, A Hugo and M Joseph 2004 Acetate enhances citric acid production by *Yarrowia lipolytica* when grown on sunflower oil. *System Appl Microbiol* **27**:135-138.
15. Knox AM, du Preez JC & Kilian, SG 2004 Starch fermentation characteristics of *Saccharomyces cerevisiae* strains transformed with amylase genes from *Lipomyces kononenkoae* and *Saccharomycopsis fibuligera*. *Enz Microb Technol* **34**:453-460.

Three strains of *Saccharomyces cerevisiae* transformed with different combinations of foreign yeast amylase genes were evaluated in aerobic and anoxic bioreactor cultures in respect of their growth characteristics and ability to hydrolyse and ferment starch to ethanol. The cloned genes were the *Lipomyces kononenkoae* LKA1 and LKA2 α -amylase genes, both with the *S. cerevisiae* PGK1 promoter and terminator, and the *Saccharomycopsis fibuligera* SFG1 glucoamylase gene with its natural promoter and terminator. Preliminary evaluation on starch agar plates failed to reflect the relative performance of these recombinant strains on starch in submerged cultures. Although LKA2 is described in literature as a gene encoding

α -amylase, we found negligible α -amylase activity using the Phadebas assay. Anoxic cultivation on 55 g starch l⁻¹ resulted in the production of 21 g ethanol l⁻¹ at a yield of 0.4 g ethanol per g starch within 120 h by a strain transformed with a double gene cassette containing LKA1 plus SFG1. A strain expressing LKA1 plus LKA2 fermented starch slowly, producing low amylase activities that appeared only late in the fermentation. With all strains plasmid loss was negligible. The rate of starch hydrolysis was the rate-limiting step in the fermentation of starch. The data presented here illustrate the need to evaluate and characterise genetic transformants thoroughly, since genetic engineering procedures sometimes yield unexpected outcomes.

16. Viljoen BC, A Knox, LR Beuchat, T Deak, M Malfeito-Ferreira, TK Hansen, A Hugo, M Jakobsen, V Loureiro, A Lourens-Hattingh and R Vasdinnyi 2004 An inter-laboratory evaluation of selective media for the detection and enumeration of yeasts from blue-veined cheese. *Int J Food Microbiol* (In press)

Five countries representative of laboratories 1 to 5 evaluated eleven different selective media, designed to suppress mould and bacterial growth and support yeasts growth, for the recovery of yeast populations from blue veined cheeses. In addition, qualitative results were also incorporated. The yeast enumeration values were subjected to statistical analysis using analysis of variance (ANOVA) and the Tukey-Kramer multiple comparison test. With the exception of Laboratory 3, none of the other laboratories was successful in recovering yeasts on all the media. Six of the media proved inadequate for the enumeration of yeasts in the mould invested environment and were therefore omitted from statistical analysis. No significant differences in quantitative data obtained on Rose-Bengal Chloramphenicol

Agar (RBCA), Dichloran Rose-Bengal Chloramphenicol Agar (DRBC), Dichloran 18% Glycerol Agar (DG18), and Malt extract agar supplemented with NaCl and oxytetracycline (MES) were detected by four of the collaborating laboratories whereas one laboratory found RBCA to be superior for yeast enumeration. DG18 and Malt Extract Agar with Biphenyl (MEB), however, were ranked superior based on qualitative results compared to the other media, attributed to distinctive individual yeast colonies and mould inhibition. RBCA, DRBC, DG18, and MES on the other hand, all proved to be adequate in supporting yeast colony development for quantitative analysis in samples obtained from blue veined cheeses.

X. Department of Applied Microbiology and Food Science, University of Saskatchewan, 51 Campus Drive, Saskatoon, Canada S7N 5A8. Communicated by W.M. (Mike) Ingledew <ingledew@sask.usask.ca>.

The following papers have been published since our last report.

1. D Bayrock, KC Thomas and WM Ingledew 2003 Control of *Lactobacillus* contaminants in continuous fuel ethanol fermentations by constant or pulsed addition of penicillin G. *Appl Microbiol Biotechnol* **62**:498-502.

The addition of penicillin G to combat microbial contamination in continuous fuel alcohol fermentations was performed using both continuous and pulsed addition regimes. In continuous fermentations where both *Saccharomyces cerevisiae* and *Lactobacillus paracasei* were present, the mode of addition of penicillin G determined final numbers of viable *L. paracasei*. When the same overall average concentration of penicillin G was added in both pulsed and continuous modes, the initial viable number of *L. paracasei* (8.0×10^9 cfu ml⁻¹) decreased to a greater degree (1.02×10^5 cfu ml⁻¹ *L. paracasei*) when penicillin G was pulsed at 6 h frequencies at an overall average concentration of

2,475 U/l than when penicillin G was added continuously at 2,475 U/l (2.77×10^5 cfu ml⁻¹ *L. paracasei*). Pulsed additions over longer frequencies at 2,475 U/l were not as effective in reducing viable bacteria. Viable yeasts increased during both treatment conditions by more than 2-fold. The two addition regimes also eliminated the 40% decrease in ethanol concentration caused by the intentional bacterial infection. Although there was 3 times more bacterial death with 6 h pulsed additions compared to continuous additions of penicillin G at 2,475 U/l, there was, by that point, no practical difference in either final ethanol concentration or relative ethanol recovery.

2. WM Ingledew 2003 Chapter 11. Continuous fermentation in the fuel alcohol industry: How does the technology affect yeast? The Alcohol Textbook. 4th Edition. KA Jacques, TP Lyons and DR Kelsall. Nottingham University Press. Nottingham UK. pp 135-143.
3. WM Ingledew 2003 Chapter 24. Water reuse in fuel alcohol plants: effect on fermentation. Is a 'zero discharge' concept attainable? The Alcohol Textbook. 4th Edition. KA Jacques, TP Lyons and DR Kelsall. Nottingham University Press. Nottingham UK. pp 343-354.
4. WM Ingledew 2003 Propagation of yeast in a distillery: Is it worth the risk? Why I don't believe so. Ethanol Producer Magazine. 9(1):40-42.
5. WM Ingledew and E Bellissimi 2003 Active dry, high-alcohol yeasts: The new yeasts on the block. Ethanol Producer Magazine. 9(6):24-27.

XI. Institut für Pflanzengenetik und Kulturpflanzenforschung, Corrensstr. 3, D-06466 Gatersleben, Germany. Communicated by G. Kunze <kunzeg@ipk-gatersleben.de>.

Recent publications.

1. Y Terentiev, G Gellissen and G Kunze 2003 *Arxula adeninivorans* – a non-conventional dimorphic yeast of great biotechnological potential. Recent Res Devel Appl Microbiol Biotechnol 1:135-145.

The non-pathogenic, dimorphic, haploid, ascomycetous yeast *Arxula adeninivorans* exhibits many properties of biotechnological interest. This yeast species is able to assimilate and ferment a range of compounds as sole carbon or nitrogen source. As such it efficiently utilizes n-alkanes and degrades starch and purines. Features like thermo- and osmoresistance as well as its unusual growth and secretion behavior add to its biotechnological potential. *Arxula adeninivorans* is able to grow at cultivation temperatures of up to 48 °C, even surviving cultivation at 55 °C for some hours. It maintains growth in presence of strong ionic, osmotic and water stresses. In addition, it exhibits a reversible temperature-dependent dimorphism in growing as budding cells below 42 °C and as mycelia at higher temperatures. The morphological status is correlated to changes of secretion characteristics. Mycelial cultures accumulate proteins in concentrations 2 fold higher than budding cells

including the secreted enzymes glucoamylase and invertase. Based on these properties *Arxula adeninivorans* can be applied to heterologous gene expression and to provision of genes with attractive properties. For example the *Arxula* glucoamylase gene was successfully introduced into *Saccharomyces cerevisiae* and *Kluyveromyces lactis* to render these species amylolytic. The *A. adeninivorans*-based transformation system uses linearized DNA fragments that are mitotically stable integrated as 2-10 copies into the 25S rDNA. Successful expression examples include pro- and eukaryotic genes like *lacZ* from *E. coli*, *XylE* from *Pseudomonas putida*, *GFP* from *Aequorea victoria*, and human *HSA*. For construction of polyhydroxyalkanoate-producing strains the *Ralstonia eutropha*-derived genes *phbA*, *phbB* as well as *phbC* were successfully expressed in *A. adeninivorans* sustaining its potential as host for heterologous gene expression.

2. J Klabunde, G Kunze, G Gellissen and CP Hollenberg 2003 Integration of heterologous genes in several yeast species using vectors containing a *Hansenula polymorpha*-derived rDNA targeting element. FEMS Yeast Res 4:185-193.

A method that has been successfully used to generate recombinant *Hansenula polymorpha* strains by transformation with rDNA targeting vectors was applied in the present study to a range of alternative yeast hosts, using vectors with an *H. polymorpha*-derived integration sequence. The dimorphic yeast *Arxula adeninivorans*, which is currently being assessed for

heterologous gene expression, was the main focus of the study. As in *H. polymorpha* it was possible to co-integrate more than a single plasmid carrying an expressible gene. Additionally, the vectors were examined in two further species, *Pichia stipitis* and *Saccharomyces cerevisiae*. Based on these results the design of a "universal" fungal vector appears to be feasible.

3. Y Terentiev, U Breuer, W Babel and G Kunze 2004 Non-conventional yeasts as producers of polyhydroxyalkanoates – Genetic engineering of *Arxula adeninivorans*. Appl. Microbiol. Biotechnol. 64:376-381.

The non-conventional yeast *Arxula adeninivorans* was equipped with the genes *phbA*, *phbB* and *phbC* of the polyhydroxyalkanoate (PHA) biosynthetic pathway of *Ralstonia eutropha*, which encode β -ketothiolase, NADPH-linked acetoacetyl-CoA reductase and PHA synthase, respectively. *Arxula* strains transformed solely with the PHA synthase gene (*phbC*) were able to produce PHA. However, the maximum content of the polymer detected in these strains was just 0.003%

(w/w) poly-3-hydroxybutyrate (PHB) and 0.112% (w/w) poly-3-hydroxyvalerate (PHV). The expression of all three genes (*phbA*, *phbB*, *phbC*) resulted in small increases in the PHA content of the transgenic *Arxula* cells. However, under controlled cultivation conditions, with minimal medium, and ethanol as the carbon source, the recombinant yeast was able to accumulate up to 2.2% (w/w) PHV and 0.019% (w/w) PHB. Possible reasons for these differences are discussed.

4. E Böer, T Wartmann, B Luther, R Manteuffel, R Bode, G Gellissen and G Kunze 2004 Characterization of the *AINV* gene and the encoded invertase from the dimorphic yeast *Arxula adenivorans*. Antonie van Leeuwenhoek (in press).

The invertase-encoding *Arxula adenivorans AINV* gene was isolated and characterized. The gene includes a coding sequence of 2700 bp encoding a putative 899 amino acid protein of 101.7 kDa. The identity of the gene was confirmed by a high degree of homology of the derived amino acid sequence to that of α -glucosidases from different sources. The gene activity is regulated by carbon source. In media supplemented with sucrose induction of the *AINV* gene and accumulation of the encoded invertase in the medium is observed. In addition the extracellular enzyme level is influenced by the morphological status of the organism, with mycelia secreting the enzyme in titres higher than those observed in budding yeasts. The enzyme characteristics are

analysed from isolates of native strains as well as from those of recombinant strains expressing the *AINV* gene under control of the strong *A. adenivorans*-derived *TEF1* promoter. For both proteins a molecular mass of 600 kDa was determined, a pH optimum at pH 4.5 and a temperature optimum at 55 °C. The preferred substrates for the enzyme include the β -D-fructofuranosides sucrose, inulin and raffinose. Only a weak enzyme activity was observed for the α -D-glucopyranosides maltotriose, maltose and isomaltose. Thus the invertase primarily is a β -fructosidase and not an α -glucosidase as suggested by the homology to such enzymes.

5. Y Terentiev, A Huarto Pico, E Böer, T Wartmann, J Klabunde, U Breuer, W Babel, M Suckow, G Gellissen and G Kunze 2004 A wide-range integrative yeast expression vector system based on *Arxula adenivorans*-derived elements. J Ind Microbiol Microbiol (in press).

An *Arxula adenivorans* integration vector was applied to a range of alternative yeast species including *Saccharomyces cerevisiae*, *Debaryomyces hansenii*, *Debaryomyces polymorphus*, *Hansenula polymorpha* and *Pichia pastoris*. The vector harbours a conserved *A. adenivorans*-derived 25S rDNA sequence for targeting, the *A. adenivorans*-derived *TEF1* promoter for expression control of the reporter sequence, and the

E. coli-derived *hph* gene conferring resistance against hygromycin B for selection of recombinants. Heterologous gene expression was assessed using a *GFP* reporter gene. The plasmid was found to be integrated into the genome of the various hosts tested; recombinant strains of all species exhibited heterologous gene expression of a similar high level.

XXII. Department of Biology, University of Western Ontario, London, Ontario, Canada N6A 5B7. Communicated by M.A. Lachance <lachance@uwo.ca>.

The following lectures were presented recently.

1. Lachance MA 2004 Sequence divergence and the species concept in *Metschnikowia* species associated with nitidulid beetles. 100th Anniversary Symposium, Centraalbureau voor Schimmelcultures, Amsterdam, The Netherlands.
2. Lachance MA 2004 Analysis of sequence divergence in the reconstruction of yeast species formation. Workshop on Modeling Microbial Evolution Dept. of Applied Mathematics, University of Western Ontario.

The following papers are now in print.

3. Trindade RC, MA Resende, RS Pimenta, MA Lachance & CA Rosa 2004 *Candida sergipensis*, a new asexual yeast species isolated from frozen pulps of tropical fruits. Antonie van Leeuwenhoek **86**:27-32.
4. Marinoni G and MA Lachance 2004 Speciation in the large-spored *Metschnikowia* clade and establishment of a new species, *Metschnikowia borealis* comb. nov. FEMS Yeast Res **4**:587-596.
5. Hirai AR Kano, K Makimura, ER Duarte, JS Hamdan, MA Lachance, H Yamaguchi & A Hasegawa 2004 *Malassezia nana* sp. nov., a novel lipid-dependent yeast species isolated from animals. Int J Syst Evol Microbiol **54**:623-627.

Papers in press.

6. Herzberg M and MA Lachance 2004 *Candida bombiphila* sp. nov., a new asexual yeast species in the *Wickerhamiella* clade. Int J Syst Evol Microbiol.
7. Carreiro SC, FC Pagnocca, M Bacci Jr, MA Lachance, OC. Bueno, MJA. Hebling, CCC Ruivo, and CA. Rosa 2004 *Sympodiomyces attinorum* sp. nov., a novel yeast species associated with nests of the leaf-cutting ant *Atta sexdens*. Int J Syst Evol Microbiol.
8. Ruivo CCC, MA Lachance, M Bacci Jr, SC Carreiro, CA Rosa & FC Pagnocca 2004 *Candida leandrae* sp. nov., an asexual ascomycetous yeast species isolated from tropical plants. Int J Syst Evol Microbiol.
9. Morais PB, LCRS. Teixeira, JM Bowles, MA Lachance, and CA Rosa 2004 *Ogataea falcaomoraisii* sp. nov., a sporogenous methylotrophic yeast from tree exudates. FEMS Yeast Res

Obituary- Prof. Lajos Ferenczy

The Hungarian microbiology community has just suffered a great loss: on March 19, 2004, after suffering from severe heart insufficiency, Lajos Ferenczy (74), Professor Emeritus at the University of Szeged and Member of the Hungarian Academy of Sciences, passed away. Ferenczy graduated in biology and chemistry in 1953, obtained a PhD in 1960, and remained affiliated with the University of Szeged for his entire life. There, he founded the Department of Microbiology and served as Chair until 1997, thenceforth continuing as research Professor and leader a Microbiology Research Group of the Academy at the University until his untimely death. His early interest in biologically active compounds and their mode of action against yeasts and filamentous fungi led him to the study of fungal cell walls. He carried out the first controlled protoplast fusion of yeast cells (1972), which is regarded by many as his most outstanding scientific achievement. This was further developed into highly effective procedures for the transfer of genes and the genetic modification of fungi. The application of protoplast fusion to both basic and applied areas of fungal genetics brought him a wide recognition internationally. Prof. Ferenczy became a member of the Hungarian Academy of Sciences in 1985, was elected to the Academia Europea in 1990, and in 2002 became a member of the American Academy of Microbiology as well as the National Academy of Sciences (USA). Generations of mycologists grew up around Prof. Ferenczy, and currently a large number of department heads and professors of microbiology across Hungary regard him as their mentor. As a great scientist, an outstanding teacher, a gentle person, and a cordial friend, his memory will forever be preserved. We shall remember him with our greatest respect.

Tibor Deak, PhD, DSc
Professor
Budapest University ESPA

International Commission on Yeasts

During the Eleventh International Congress on Yeasts (ICY 11) in Rio de Janeiro, the International Commission on Yeasts will convene at Hotel Glória Convention Center, on Tuesday 17 August 2004 at 12.30 h, during lunch under the hospitality of Professor Leda Cristina Mendonça-Hagler. All Commissioners are kindly invited to take part.

Suggestions for the Agenda and other messages may be sent to: lex.scheffers@tnw.tudelft.nl

Lex Scheffers
Chair, ICY

Recent Event

**CBS Centenary Symposium
100 Years of Fungal Biodiversity and Ecology
Amsterdam, May 13-14 2004**

The Centraalbureau voor Schimmelcultures celebrated its 100th anniversary with a Symposium regrouping some 200 mycologists. Held at the Royal Netherlands Academy of Arts and Science Trippenhuis, the two-day symposium consisted in a number of lectures about all aspects of mycology, including comparative genomics and bioinformatics, biodiversity and ecology, applied mycology, evolutionary phytopathology, pathogenicity and collection preservation. The event was organized by Dr. R. A. Samson and his colleagues of the CBS. The symposium was a great success.

M.A. Lachance

Forthcoming Meetings

Eleventh International Congress on Yeasts, ICY 11 Rio de Janeiro, August 15-20 2004

On behalf of the International Committee on Yeasts (ICY) and the Federal University of Rio de Janeiro (UFRJ), I have the honor and pleasure to announce the Eleventh International Yeast Congress (formerly ISY) to be held during 15-20th of August, 2004 in Rio de Janeiro, Brazil.

The Conference venue is Hotel Gloria Convention Center, a traditional five star hotel, located in the south zone of Rio, close to the city center and with a panoramic view over Guanabara Bay. The first announcement information is available at the homepage <http://www.icy2004.com.br>.

Further information can be obtained by e-mail:

<congress@icy2004.com.br>

or

<leda@icy2004.com.br>

The theme of the symposium will be "Yeasts in Science and Technology: the quest for sustainable development." The scientific program is under development and we would welcome your suggestions on the topics to be presented. Please, send your address to receive ICY2004 folder and poster. Welcome to Rio!

Leda Mendonça-Hagler, ICY2004 Chair

Kluyveromyces lactis meeting: change of dates

Dear friends: Due to uncontrollable circumstances, the *K. lactis* meeting cannot take place in July as previously anticipated. I can offer to organize the meeting in the first weekend of September. Arrival to Salamanca, September 3 Friday at noon, to start at 5 pm, followed by meetings all day Saturday, and departure on

Sunday September 5. Alternatively we can work all Saturday and Sunday morning. If these dates aren't possible for most of you we must move to any other weekend after September (September 6 to 30 are local holidays and it is impossible to find lodging). I await your comments.

Prof. Dr. Angel Domínguez
Departamento de Microbiología y Genética
Edificio Departamental
Plaza de los Doctores de la Reina s/n
37007 Salamanca, Spain

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Brief News Items

Change of Address - Dr. Marie Kopecká

My department has moved to a new location recently.

Marie Kopecká
Department of Biology, Faculty of Medicine
Masaryk University
Tomesova 12
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Czech Republic

<mkopecka@med.muni.cz>

Change in employment – Dr. Makiko Hamamoto

I recently moved from RIKEN (The Institute of Physical and Chemical Research) to assume an associate professor position at Meiji University. I shall continue my research in yeast systematics. My new contact address appears below.

Makiko Hamamoto
Department of Life Sciences
School of Agriculture, Meiji University
Higashimita, Tama-ku, Kawasaki
Kanagawa 214-8571, Japan

Phone/Fax: +81 44 934 7046
<hamamoto@isc.meiji.ac.jp>

Publication of Interest

Antonie van Leeuwenhoek International Journal of General and Molecular Microbiology

Editor-in-Chief: Iain Sutcliffe, Division of Biomedical Sciences, Northumbria University, Newcastle upon Tyne, UK.

Antonie van Leeuwenhoek will publish papers on fundamental and applied aspects of microbiology. Topics of particular interest include: taxonomy, structure & development; biochemistry & molecular biology; physiology & metabolic studies; genetics; ecological studies; marine microbiology; medical microbiology; molecular biological aspects of microbial pathogenesis and bioinformatics.

Message from the Editor

Antonie van Leeuwenhoek has always provided an outlet for fundamental and applied research and has had important success in publishing both bacteriological studies and studies of yeasts and fungi. It is important to me to maintain these traditional strengths and also develop new areas of interest, notably by keeping pace with the explosion of biological data that is a characteristic of the genomic era. In this respect, I hope to encourage the journal's standing in the areas of bioinformatics and post-genomics; biodiversity; the molecular basis of microbial pathogenicity; and marine, plant and veterinary microbiology. Furthermore, I would welcome suggestions from authors interested in submitting review articles and also scientists interested in editing Special Issues.

How to submit your paper

We cordially invite you to submit your papers to Antonie van Leeuwenhoek. The journal welcomes research papers, review papers and short communications. To keep the review time as short as possible (no postal delays!), Kluwer Academic Publishers now requires authors, editors and reviewers of Antonie van Leeuwenhoek to use our fully web-enabled online manuscript submission and review system. Our online manuscript submission and review system offers authors the option to track the progress of the review process of manuscripts in real time. Manuscripts should be submitted to: <http://anto.edmgr.com>. The online manuscript submission and review system for Antonie van Leeuwenhoek offers easy and straightforward log-in and submission procedures. Submitting your paper has never been easier!

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Visit the forthcoming papers section on the Antonie van Leeuwenhoek journal webpage to find all accepted forthcoming articles. The uncorrected proofs are freely accessible for everyone.

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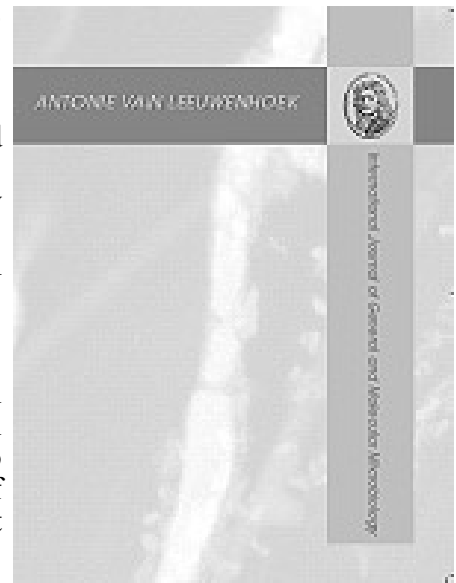
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Questionnaire - Yeast Newsletter in Electronic Format?

Some points to consider

- ➔ The Yeast Newsletter has been mailed to readers for half a century. The current readership is around 340.
- ➔ Paid subscriptions help meet part of the costs of printing and postage.
- ➔ Were our readers strongly in support of moving to an electronic format, I would periodically post a PDF version on a server and inform readers by email that the current issue is freely available for download. The effort required in preparing the document would not change, but a reduction in the current workload associated with mailing and (especially) accounting would be welcome.
- ➔ The electronic format may offer the advantage that more individuals could become aware of the Yeast Newsletter and read it.
- ➔ Some readers may prefer to continue receiving a printed version that can be read at one's leisure and filed for future reference. Some readers might enjoy the convenience of not having to download and print each issue. I would be happy to continue offering that service to paying subscribers.
- ➔ In view of the current assault of our e-mail accounts by masses of offensive, unsolicited materials, the ability to retrieve the Yeast Newsletter freely from the Internet might diminish its perceived value.

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