



EUROPEAN BREWERY CONVENTION

MONOGRAPH 28

E.B.C. - SYMPOSIUM YEAST PHYSIOLOGY -
A NEW ERA OF OPPORTUNITY
NUTFIELD, UNITED KINGDOM
NOVEMBER 1999



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INDEX

Title:	Authors:	Pages:
Index of descriptors		8 - 9
Introduction	J.R.M. HAMMOND	10
Session I	GENERAL	11
<i>Session Chairman: J.R.M. Hammond</i>		
1. Current brewing industry drivers for yeast research	E. PAJUNEN	12 - 14
Session II	THE YEAST ORGANISM: CELL - CELL INTERACTIONS AND SUBSTRATE ASSIMILATION	15
<i>Session Chairman: D.E. Quain</i>		
2. Flocculation and adhesion	K.A. SMART	16 - 29
3. Controlled expression of <i>FLO1</i> in <i>Saccharomyces cerevisiae</i>	K. VERSTREPEN	30 - 42
4. Brewing yeast sugar metabolism	I. SPENCER-MARTINS	43 - 50
5. Amino acid sensing and uptake	M.C. KIELLAND-BRANDT	51 - 57
Session III	YEAST METABOLISM AND FLAVOUR	59
<i>Session Chairman: G.G. Stewart</i>		
6. Yeast flavour metabolites	A. DEBOURG	60 - 73
7. The catabolism of branched-chain amino acids to fusel alcohols	J.R. DICKINSON	74 - 82
8. Towards our understanding of the physiological role of ester synthesis	J.-P. DUFOUR	83 - 91

Session IV PROCESS OPTIMISATION 93

Session Chairman: D.S. Ryder

- | | | | |
|-----|--|--------------|-----------|
| 9. | Fermentation intensification - The challenge | G.G. STEWART | 94 - 114 |
| 10. | Yeast genetic stress responses - Relevance to brewing | M. LEE | 115 - 127 |
| 11. | Technological factors to improve fermentation performance and beer quality | S. LUSTIG | 128 - 138 |

Session V BREWING YEAST DEVELOPMENT - NEW APPROACHES 139

Session Chairman: P. Sigsgaard

- | | | | |
|-----|---|----------------------|-----------|
| 12. | Brewing yeast genetics | M.C. KIELLAND-BRANDT | 140 - 147 |
| 13. | Genetic and physiological instability of brewing yeast | J. WATARI | 148 - 160 |
| 14. | Redox balance in fermenting yeast | J.C. LONDESBOROUGH | 161 - 170 |
| 15. | Physiological study of the yeast propagation process by 2-D electrophoresis | R. JOUBERT | 171 - 181 |

POSTER PRESENTATIONS 183

- | | | | |
|----|---|--------------|-----------|
| A. | A new method to select high-performance brewing yeast | J. RROTH | 184 |
| B. | Flexible control of growth for brewing yeast production | J. PROTH | 185 |
| C. | The use of flow cytometry for monitoring yeast condition during the fermentation process | A. EIDTMANN | 186 - 193 |
| D. | Control of cell cycle, glycogen content and viability of brewing yeasts during fermentation by flow cytometric analysis | K.-J. HUTTER | 194 - 197 |
| E. | Physiological stress-protection of brewing yeast | G. WALKER | 198 - 201 |

F.	Results of an experimental design on fermentation and ruh factors which significantly affect the production of medium chain fatty acids and volatile organic compounds by <i>Saccharomyces carlsbergensis</i> during laboratory fermentations	K. VILLA	202 - 211
G.	Inhibition of yeast growth by dissolved carbon dioxide: a mean to control the fusel alcohol/ester ratio in beer fermentation	S. LANDAUD	212
	Autobiographies of participants		213 - 222
	List of participants		223 - 228

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POSTER PRESENTATIONS 183

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INDEX OF DESCRIPTORS

- Accelerated fermentation, A
- Accelerated maturation, A
- Adhesion, 2
- Amino acid, 5, 6, 7
- Alcohol acetyltransferase, 8
- Assimilation, 11
- ATF1*, 8
- ATF2*, 8
- Beer quality, 11
- Biomonitoring, C
- Bottom fermenting yeast, 13
- Brewers' yeast, 15, A, E
- Brewing properties, 13
- ¹³C NMR spectroscopy, 7
- Carbon dioxide, G
- Catabolism, 7
- Catabolite repression, 4
- Cell cycle, C
- Chromosomal DNA banding patterns, 13
- Chromosome, 12, A
- Coenzyme, 14
- Cropping, C
- Dehydrogenase, 14
- Dissolved gas, G
- Electrophoresis, 15
- Enzyme, 6, 7
- Enzymic activity, 8
- Ester, 8, 9, G
- Ethanol, 14, B, E
- Fatty acid, F
- Fermentation, 1, 9, C, D
- Fermentation conditions, 10, 15, E, F
- Fermentation defect, 3
- Fermentation technology, 11
- Fermentation temperature, G
- Fermentative power, 11
- Flavour formation, 1, 6, 7
- Flavour stability, 11
- Flocculation, 2, 3, 13
- Flocculent yeast, 3
- Flow cytometry, C, D
- FLO1*, 3, 13
- Fluorescence, C
- Fluorescence flow cytometry, 11
- Foam stability, 9
- Fusel alcohol, 6, 7, G
- Gene, 7
- Gene expression, 8, 10
- Genetic engineering, 3, 4, 5, 6, 9, 14
- Genetic instability, 13
- Genetics, 10, 12, 13
- Glycerol, 14
- Glycogen, D
- High gravity brewing, 9
- Higher alcohols, 6
- HSP30*, 3
- Immobilised yeast, 2, 9
- Industrial processes, 15
- Inhibition, G
- Lager brewing yeast, 15
- Lg-*FLO1*, 13
- Magnesium, E
- Maltose, 4, 9
- Maltotriose, 4
- Maturation, 9
- Metabolism, 4, 5, 6, 7
- Mitochondrial DNA polymorphism, 13
- NAD, 14
- NADP, 14
- Nucleotide, 12
- Neutral lipids, C
- Optimisation, 9, 11, A, E
- Organic compound, F
- Pedigree, 13
- Pentose, 14
- Physiology, 8, 10, 13, 15, C, D, E
- Pitching, 11, C
- Process control, B
- Process supervision, C, D
- Propagation, 11, 15, A, B
- Proteinase A, 13
- Pulsed-Field Gel Electrophoresis, 13
- Quality control, 1
- Redox potential, 14
- Research and development, 1
- Self-cloning, 3
- Single colony isolation, 13
- Software, B
- Stirring, F
- Strain improvement, 13
- Stress, E
- Sugar, 4
- Sulfite production, 13
- Surface properties, 2
- Transport, 4
- Viability, C, D

Vicinal diketones, 6
Vitality, C
Volatile compound, F
Wort composition, 4
Yeast, 10
Yeast analysis, 4, C
Yeast chiller, 11

Yeast growth, D, G
Yeast mutant, 7, 9
Yeast protein map, 15
Yeast strain, 3, 6, 12, 13, E
Yeast technology, 1, 5, 8, 11, 14
Yield, E

INTRODUCTION

John Hammond - General Chairman

It is appropriate that the topic for the last EBC Symposium of the twentieth century should be yeast. The century began with the first suggestions of how yeast produced alcohol. The Buchner brothers in Munich had produced a cell-free juice from yeast which they called zymase and which carried out the conversion of sugar to alcohol. With this they laid the foundations of the science we now call biochemistry. Some thirty years later the first steps towards understanding yeast genetics were taken in the USA and Denmark. Now, one hundred years later, the complete genome of one yeast, closely related to brewers yeast, has been sequenced and the task of elucidating the functions of the identified genes is well underway.

It is also worth remembering the dramatic changes that have occurred since the last EBC Symposium on yeast physiology was held in Finland only 13 years ago. The European Brewing Industry has changed markedly with consolidation resulting in many brewery closures and the rise of international beer brands, many of which are completely new products. The business drivers pushing these changes forward are continually demanding new technological solutions which brewery research and development staff must provide. In science we have seen the rise of genetically-modified brewing yeasts, one strain being approved for commercial use but never introduced. Now with the dramatically changed public attitude towards genetic modification, it would be very unwise to predict if and how long it will be before genetically modified yeasts and ingredients find their way into beers. However, undoubtedly the biggest change since 1986 has been in the area of yeast genetics. In the intervening years yeast science has leapt forward with the sequencing of the yeast genome and, more recently, the development of approaches to allow the integrated study of genetics and physiology. At long last the apparent splitting of yeast research into two camps is over and biochemists and molecular geneticists are working fruitfully together.

In this symposium book the reader will find an excellent set of presentations produced by leading scientists in their respective fields alongside a number of articles from brewery representatives who give the science an industrial perspective. The net result is a distillation of the status of yeast physiology at the beginning of the twenty-first century together with thoughts on the research priorities of the brewing industry in both the short and long terms.

Discussions during the symposium highlighted a perceived need for standardisation if comparable results are to be obtained from the limited amount of work being carried out with brewing yeast strains. The need for researchers to use standard fermentation protocols and the same yeast was agreed but what proved more difficult was to agree what the strain and conditions should be! Similarly the issue of funding is becoming more difficult with the amount of money available from industrial sources for fundamental research being quite limited. However, the role of EBC is clearly to continue to act as a facilitator of links between academia and industry by the continuation of symposia, meetings and congresses.

- I would like to end by thanking all the participants, speakers, chairmen and questioners for making a first class programme truly excellent. Finally, I must thank Bill Lancashire for doing all the hard work of organising the scientific programme. Unfortunately, he was unable to attend the symposium itself and so handed over the role of General Chairman to myself. Without his input there would not have been a yeast symposium at all.

SESSION I

General

Session Chairman: J.R.M. Hammond