EUROPEAN BREWERY CONVENTION

# MONOGRAPH 28

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

Published by
FACHVERLAG
HANS CARL

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## INDEX OF DESCRIPTORS

## 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