

Book Review

Brewing Yeast and Fermentation

Chris Boulton and David Quain

Publication: September, 2001

Publisher: Blackwell Science (UK), Hardcover, 9.80 × 7.04 in., 644 p.

Price: \$214.99 US or £125 (Amazon.com)

ISBN: 0632054751

This is a “must have” book on the shelf of anyone involved in the use of yeast for ethanol production and is a book that will be used as a prime reference text for many years. Although it is aimed at the commercial brewer, particularly large brewing operations, it is a very valuable resource book for both academics and students of brewing, as well as anyone who is working with the yeast *Saccharomyces* for the production of fermentation ethanol, since the principles of yeast biochemistry are applicable across the many processes.

It is an extremely detailed book, probably too detailed for some readers without a strong background in the area. Yet that is also its greatest strength, since without a strong background the detailed explanations of the different areas are exactly what is needed and such explanations are not found, in this detail and breadth, in any other yeast textbook currently on the market.

The price of the book is quite steep and this will make it difficult for students to purchase it. It would be desirable for the publisher to bring out a soft cover version at a more affordable price. The book is well illustrated with high quality figures and tables, however many of the photographs are not of the quality one would expect from a book priced in this range.

Both authors are extremely knowledgeable in the subjects and bring a wealth of experience to their writing from working in the brewing industry. It is clear that tremendous effort and time commitment has gone into the book and the authors are to be commended for the final product.

Clearly this is a book that should be in every brewing library, and on the bookshelf of anyone who has an interest in brewing yeast and fermentation at the advanced level. The information in the book is well referenced with 51 pages of literature citations.

Listed below are the major subheadings from the various chapters to give the reader an appreciation of the breadth of the book.

Beer and Brewing

Introduction

The Brewing Process

Beer types

The brewing process

Wort composition

High gravity brewing

Glossary of terms

The Biochemistry of Fermentation

Overview

Mass balance

Assimilation of wort nutrients

Carbohydrate dissimilation

Requirement of oxygen

Ethanol tolerance

Formation of flavour compounds

Brewing Yeast

Morphology, cytology and cellular function

Taxonomy and differentiation

Genetics – genome, cell cycle and modification

Cell wall and flocculation

Fermentation Systems

General properties of fermentation vessels

Fermentation rooms

Traditional fermentation systems

Large capacity fermenters

Accelerated batch fermentation

Continuous fermentation

Immobilised systems

Pilot scale fermentation systems

Laboratory fermentation systems

Fermentation Management

Wort collection

Post-collection additions

Monitoring fermentation progress

Fermentation control

Fermentation management

Recovery of carbon dioxide

Yeast recovery

Fermenter run-down

Secondary fermentations

Yeast Management

Laboratory yeast storage and supply

Yeast propagation

Yeast handling in the brewery

Assessing yeast condition

Surplus yeast

Microbiology

Product spoilage

Controlling the risk

Sampling and testing

References

Index

I have only had this book on my desk for a couple of months, but it has very rapidly become the first reference book I turn to when looking for detailed information on yeast. Overall, a highly recommended book and well worth the price.

Reviewed by Inge Russell,
Ph.D., D.Sc., FIBiol., FIBrew.