



Book reviews

Biotechnology of Vitamins, Pigments and Growth Factors. Edited by Erick J. Vandamme. Elsevier Science Publishers, London, 1989. 439 pp.; price £77.00; ISBN 1-85166-325-8.

Vitamins are organic molecules which occur in natural food in extremely small concentrations and which are largely distinct from carbohydrates, lipids, proteins and nucleic acids. For the biological processes of life they are required in small amounts in the diet of higher animals. These molecules serve nearly the same roles in all forms of life, but higher animals do not have the capacity to synthesize them. When they are absent from the diet, or improperly absorbed from the foods, there is risk of the development of a specific deficiency disease – the classic example being scurvy – the result of vitamin C shortage.

Today a number of processed foods, feeds, cosmetics, pharmaceuticals and chemicals contain extra added vitamins, and this has driven a need for enforced production of vitamins by chemical or biotechnological methods.

'Biotechnology of Vitamins, Pigments and Growth Factors' provides useful information on the potential industrial synthesis of economically important vitamins, growth factors and pigments, with emphasis on biotechnological aspects including microbiology, genetics, biochemistry and bioprocess technology. It is divided into four parts, and the introductory chapter contains basic information on vitamins and their economic production and application. The following parts are: fat-soluble vitamins and pigments, water-soluble vitamins and other growth factors.

Each chapter has data on the discovery, properties, production, biosynthesis, genetics, chemical synthesis, application and economics of the active factors. Illustration formulae, tables and an up-to-date bibliography have been provided. Biotechnologists, biochemists, biologists, microbiologists and chemist researchers could all benefit from reading this book on a subject which ordinarily may only be main line for a few.

Regina C. M. Paula
John F. Kennedy

Innovative Hazardous Waste Treatment Series Volume 3: Biological Processes. Edited by H. M. Freeman and P. R. Sferra. Technomic Publishing, Basel, Switzerland, 1991. 202 pp., price, SFr.108 (paperback) ISBN 0-87762-618-9.

One of the major problems of the modern industrial society is that vast amounts of toxic and hazardous waste are produced. The 'Innovative Hazardous Waste Treatment Technology' series aims to show examples of new methods of waste treatment using new scientific methods. This volume, the third in the series, shows how biological technology has been, and is being, used in the treatment of these unwanted by-products, in order to make them safe, bio-degradable or useful.

'Biological Processes' includes reports on twenty-one different problems of hazardous waste that have been aided or solved by a method based on biological knowledge. Examples of these reports are Microbial Remediation of Landfill Liquids, Biological Oxidation of Organic Compounds, Biological Treatment of Wastewater Containing Hazardous Organic Compounds: 2-Ethoxyethanol, etc.

As can be seen from the examples given, all the papers describe a specific example. This is essentially where the major problem lies; unless the specific method you require to solve your own toxic waste problem is detailed here, then the book will be of little use; its only use will be in showing you how others have solved their problems in the hope that this gives you ideas on how to solve your own. This may be enough to help you solve your own problem, but in many cases it may not.

Since 'Biological Processes' consists of twenty-one papers bound together as opposed to a 'book', there is little continuity throughout the volume, and this makes it a difficult book to recommend. It is difficult to see exactly at whom this book is aimed, because if you have a hazardous waste problem, then reading 'Biological Processes' is not going to give you much help in solving it, and if you have not got a hazardous waste problem you probably won't want to read it anyway.

John F. Kennedy
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