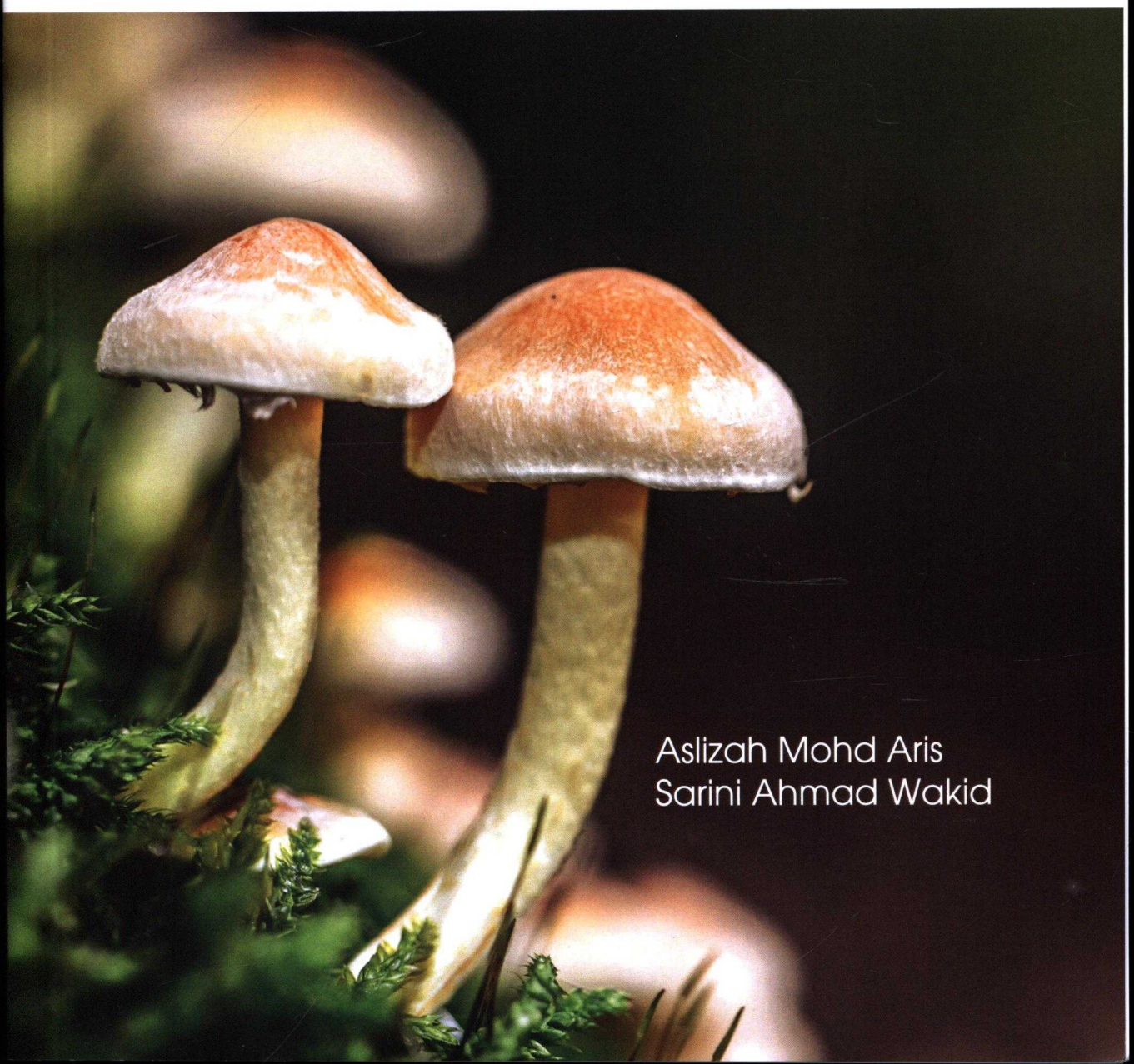
Essential Practicals in

MYCOLOGY



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Preface

Essential Practical in Mycology is a laboratory manual aimed at giving students, researchers, and laboratory personnel in the branch full practical information to work with. It contains virtually all every technique required for the investigation and identification of fungi and of their utilisation in scholarly and industrial perspective.

The manual starts with the General Regulation of the Mycology Laboratory which focuses on safety, aseptic procedures, and sound laboratory practise. These are fundamental safety measures to mitigate undue contamination influences and mishaps in experiments that could contribute to inaccurate outcomes in all abilities that are experimental. The subsequent sections are divided into a sets of experimentally defined trials.

Experiment 1: Some of the means of isolation of fungi, the various techniques of isolating fungi from the various sources such as air, soil and raw materials are discussed. Methods like cotton swab method, and soil and air samples are also revealed as a way of identifying fungi practically.

Experiment 2: Key identification of fungi is mainly based on the ability to differentiate between the yeasts and moulds by macroscopic and microscopic examination. This subtopic gives a comprehensive account of how slides should be prepared to enhance the identification process for fungi.

Experiment 3: Inoculation techniques of fungi include some basic methods for growing yeasts and moulds. This also encompasses techniques to produce spore suspensions and determination of spore densities that is crucial in qualitative work in mycology.

Experiment 4: Maintenance of spores, different methods of spores' storage are described, for example, glycerol stocks, cryopreservation and methods of storage in soil. These techniques are important to extend the shelf-life of fungi, for research and industrial purposes.

General Rules for MYCOLOGY Laboratory

Outcome of the Instruction

At the end of the session, students should be able to

1. Describe the basic rules in the microbiology laboratory.
2. Practise the correct disposal procedures.

Importance of Good Laboratory Practise

The meaning of Good Laboratory Practise is as follows:

1. To ensure accuracy, reliability, and safety in experimental procedures.
2. Guidelines for maintaining good laboratory practise and safety in a mycological laboratory.

Key To Good Laboratory Practise

As part of Good Laboratory Practise, some important routines such as the following should be followed:

1. Personal hygiene: Dress appropriately for work and laboratory by reporting to work wearing laboratory coats, operating gloves, and closed shoes. It is appropriate that one wash their hands before they enter the laboratory as well as after exit the laboratory.
2. Laboratory organisation: This involves maintaining a clean environment within the laboratory, good organisation, and no clutter. Some special precautions include labelling all containers including bottles, solutions, and instruments, as well as reagents to minimise confusion and contamination.
3. Equipment maintenance: Daily dust and wash all instruments used in the laboratory like microscopes, incubators, autoclaves, and laminar flow bonnets. Frequency frequent calibration and validation of equipment used will help reduce on possible discrepancies.

Essential Practicals in
MYCOLOGY

Essential Practicals in Mycology offers an orderly way of learning the practical in mycology, with first hand exercises that entail fungal isolation, establishment of pure cultures, and specialised methods of dual and multiple culture inoculations, and preservation. It also discusses new uses of fungi in industry for making fungal inoculum and for making tempeh linking theory into practise. Hazard identification in each experiment as well as accuracy and analysis make certain the students develop sound practical skills in line with the goal of enhancing the study of fungal biology. For method standardisation both in academic and industrial mycology, this manual provides step-by-step protocols, objectives of each of the steps and linked demo videos for reinforcement. Be it keying out mushrooms; screening biological activity; or growing fungi for commodity production; this book provides the required hands and heads to engage the profession and science of mycology.

Aslizah Mohd Aris

Aslizah Mohd Aris is experienced academician and research scholar in the fields of microbiology and mycology. She has done extensive professional work in the field of fungal biology by leading few explorations of fungi and their roles in ecology, as well as their uses in industry. Her ability to combine scholarly and application aspects in linking theory and practice is a testament of her passion in nurturing the future generations of scientists.

Sarini Ahmad Wakid

Sarini Ahmad Wakid is a skilled researcher and educator in microbiology, focusing on fungal science and its practical applications. She brings a wealth of experience in laboratory methodologies and has contributed significantly to developing practical guides for students and professionals. Sarini is committed to enhancing mycological education through clear, accessible teaching and innovative practices, inspiring learners to explore fungi's diverse roles in science and industry.

PENERBIT PRESS
UNIVERSITI TEKNOLOGI MARA

ISBN 978-629-496-100-5

Harga / Price :
RM 31.00