

## Book review

R.A. Lelliott & D.E. Stead (Eds), 1987. *Methods for the diagnosis of bacterial diseases of plants*. Blackwell Scientific Publications Ltd, Oxford. 224 pp. with 12 illustrations, softback cover. ISBN 0 632 01233 1. Price £ 14.50.

This book is the second volume of the series 'Methods in Plant Pathology' under the general editorship of T.F. Preece and published on behalf of the British Society for Plant Pathology. Volume 1 of this series, 'Methods in plant virology' by S.A. Hill, was published in 1984, and volumes covering all the main branches of plant pathology are planned.

The book is based on the collective experience in diagnosing bacterial diseases in British crops and in imported plant material at the bacteriology laboratory of the Ministry of Agriculture, Fisheries and Food (MAFF) at Harpenden and is especially valuable for use in unsophisticated diagnostic laboratories.

Chapter 1 describes general aspects of isolation, diagnostic methods, culture preservation and laboratory safety.

Chapter 2 describes the symptoms and their expression. It also provides a practical alphabetical key per plant genus describing the various symptoms and the possible bacterial pathogens.

Chapter 3 on diagnostic procedures for bacterial plant diseases forms the major part of the book. It is based on a manual prepared by Lelliott some 25 years ago for use in MAFF. Since its first appearance, the manual has been revised to select those procedures that give consistent results in practice. In this book, methods have also been included for the diagnosis of various important bacterial diseases not found in Britain. These methods are less evaluated, but their selection is based on experience gained in diagnosing imported plant material and in work with a broad range of phytopathogenic bacteria for the National Collection of Plant Pathogenic Bacteria. The chapter is organized according to the type of symptoms and is divided into sub-chapters on (a) hyperplasias; (b) leaf, stem and fruit spots and necroses; (c) cankers; (d) vascular wilts and other systemic diseases; (e) soft rots and (f) mushroom diseases. Streptomycetes and fastidious prokaryotes that are difficult to isolate and culture were excluded.

Chapter 4 deals with recent developments in techniques for rapid diagnosis. It describes the use of (1) API systems, diagnostic kits based on presence of enzymes; (2) serological techniques, including antiserum preparation, immunofluorescence microscopy, slide agglutination, latex agglutination, immunodiffusion and ELISA; (3) polyacrylamide gel electrophoresis; (4) fatty acid composition; (5) DNA hybridization. The principles of these methods are clearly described, but only a few references are given on details of these methods and on their application.

Chapter 5 describes the use of host plants for hypersensitivity and pathogenicity tests. For some pathogens, a pathogenicity test still forms the only conclusive methods of identification. Besides a description of the methods (including inoculum preparation), detailed information is presented for many pathogens.

Chapter 6 describes methods of staining, isolation and biochemical identification of bacteria, and recipes for various commonly used media.

The book is well prepared and includes a good index. It fills a gap in the literature, and is highly recommended for phytopathologists and microbiologists involved in the diagnosis of diseases. It also deserves the attention of teachers as support to lectures and for practical exercises and will be of interest for libraries of agriculture.

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