**PLANT PATHOGENS
AND THEIR
CONTROL IN HORTICULTURE**

Science in Horticulture Series

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First published 1984 by
Higher and Further Education Division
MACMILLAN PUBLISHERS LTD
London and Basingstoke
Companies and representatives
throughout the world

Typeset by
RDL ARTSET LTD, SUTTON, SURREY

British Library Cataloguing in Publication Data

Dixon, G. R.
Plant pathogens and their control in horticulture

ISBN 978-0-333-35912-9 ISBN 978-1-349-06923-1 (eBook)
DOI 10.1007/978-1-349-06923-1

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PREFACE

This book describes the application of plant pathology to horticulture. In such a context, control of plant pathogens is viewed as an integral part of crop production. From this point of view, the primary requirement is to produce fruitful, high-yielding crops in the most cost-effective manner rather than simply to control plant pathogens. Cost-effectiveness, however, needs careful definition so that long-lasting effects are achieved with minimal and acceptable disturbance to our environment. This requires knowledge of pathogen biology and of the pros and cons of specific control methods. For this reason the book is divided into two main sections. The first four chapters describe those groups of micro-organism that cause disease; these are accompanied by examples of particular fungal, viral and bacterial pathogens. Chapters 5-10 describe control by means of host resistance, chemicals and spray application, plant health regulation, husbandry and biological methods and control in the post-harvest phase. The examples of pathogens given in chapters 2-4 are expanded upon in chapters 5-10. To achieve this there is cross-referencing between chapters and particular terms are highlighted within the text in order to provide readers with readily available definitions. Inevitably in a short book, simplifications are essential; these may offend the pedant but provide the student reader with basic information. On this he or she can build and delve more deeply into facets of plant pathology. The latter purpose is served by extensive lists of references and further reading. Examples of plant pathogens have been limited but reflect the importance of particular groups such that there are several thousand fungi, several hundred viruses and only one or two hundred bacteria pathogenic to crop plants.

Books in the Science in Horticulture Series are intended for a wide range of students from diploma to undergraduate status. While this book is intended for students of horticulture it will also be valuable for those taking plant pathology and microbiology modules in agriculture, botany and forestry courses. The wider audience of growers, advisers, researchers in related fields and knowledgeable amateurs is provided with an up-to-date account of plant disease control. To help readers, some topics are broken down into short subsections in order to convey the gist of a subject area.

Valuable comments and criticism on all or part of this text have been made by: Professor L. Broadbent (Series Editor), Dr S. A. Hill, Dr P.

Howell, Mr D. R. Humphreys-Jones, Mr A. D. McKelvie, Dr A. Paton, Mr E. B. Scragg, Dr M. Shaw, Dr S. Wale and Dr A. J. Whalley. All errors and omissions are my own fault. Several essential sources of reference have been provided by Dr D. M. Spencer. I record my thanks to those who have so freely provided illustrations; specific acknowledgements are given at appropriate points in the text. I am especially grateful to Mrs M. Sinclair who has cheerfully and efficiently typed my longhand into intelligible script; Mrs A Park and Mrs M. Forbes have provided great assistance in tracing reference material. Particular thanks are due to my wife, Kathy, and to Lucy and Richard for their forbearance and understanding during the preparation of this book. Staff at the Macmillan Press, especially Mr M. J. Stewart, have been a constant source of help and encouragement.

Aberdeen, 1983

G. R. D.