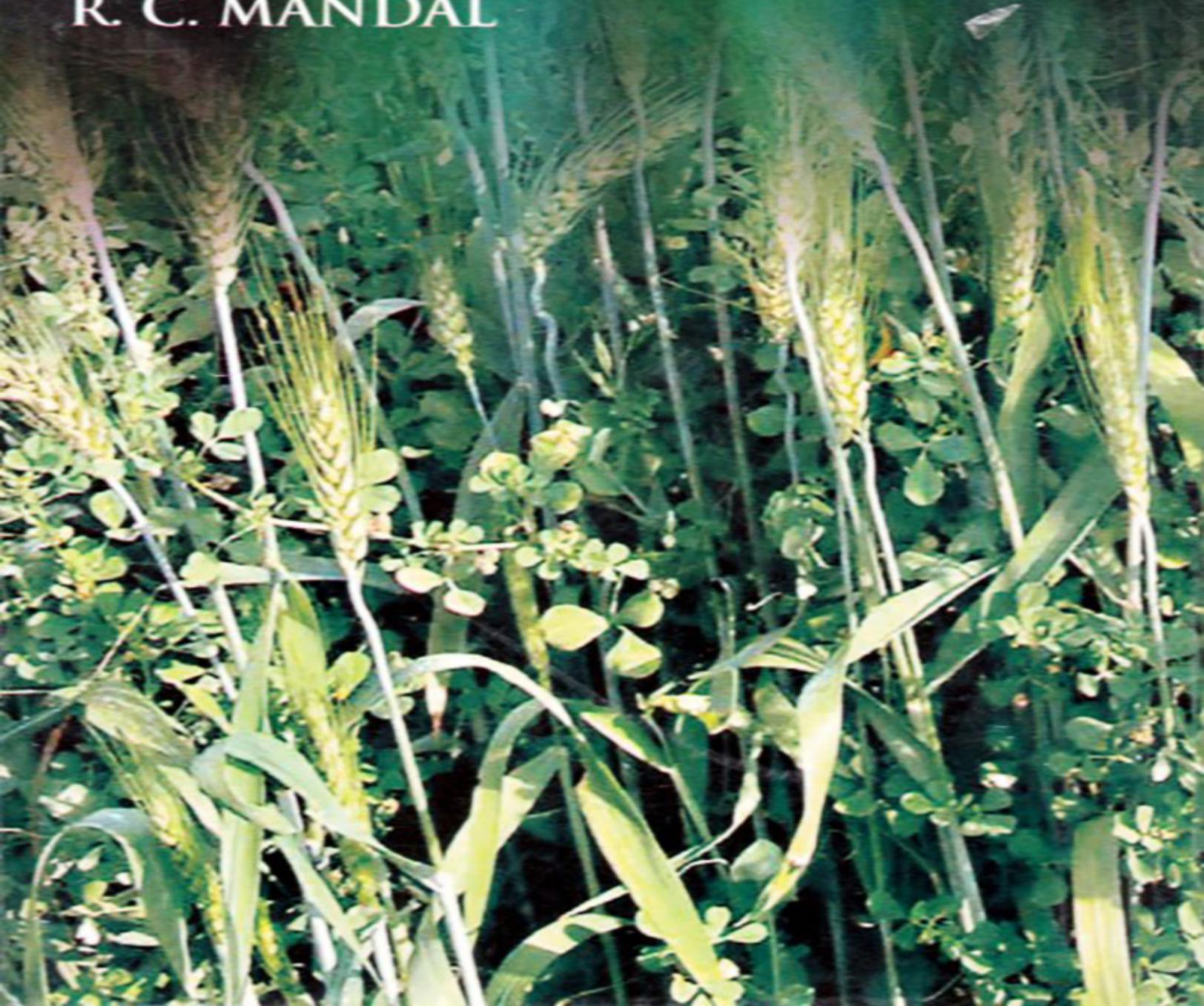


WEED, WEEDICIDE AND WEED CONTROL

Principles and Practices

R. C. MANDAL



**WEED, WEEDICIDES AND
WEED CONTROL
PRINCIPAL AND PRACTICE**

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Principal and Practice

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FOREWORD

To meet the food needs of the rapidly growing population, the farmers have to achieve economic efficiency by intensifying their farming system. Weed science has assumed great importance and weed control technology is considered as a part of the production system. Innumerable weed species grow under various environments competing successfully with neighbouring crops and hence an integrated approach to protect the crop from enormous losses by weeds is needed, particularly by changing the system from traditional manual to modern herbicidal weed control.

The author has briefly described monocotyledonous, dicotyledonous, parasitic and aquatic weeds, their allelopathy and also suitable herbicidal treatments for control of weeds occurring in annual, biennial and perennial crops. Useful illustrations have also been provided. Every attempt has been made to provide sufficient information in each chapter in handling particular weed problems. Many of these practical weed control techniques have proved of great value. The rapidly increasing specialization of weed control techniques has made it desirable to emphasize the broadly applicable principles and basic methods and the scientific basis underlying control measures.

The author has dealt with the subject in a commendable manner and I am confident that the present book will be very useful to teachers in colleges and vocational training centres and also to research workers, students and extension specialists. The book will, I hope be welcomed as making a

substantial contribution towards filling the large gap in the available weed science literature. I sincerely wish that this kind of practical guide should reach all those who are interested in the practical aspects of the important subject of weed control.

B. P. Pal
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PREFACE

Weeds pose serious problems in both crop and non-cropped areas and water-bodies. They infest lawns and gardens; become troublesome along highways, railroads and industrial areas; in irrigation and drainage systems; and create health hazards to animal and human beings.

Though a handbook of 'some South Indian weeds' was published in 1932, the weed control as a Science was initiated since 1942. Since then the primitive methods of weed control are blended with the newest herbicide control techniques and 2,4-D was first used on a large scale in 1947. With the growing interest in weeds and weed control by the scientists of different disciplines, namely Ecologist, Plant Physiologist, Agronomist, Biochemist and others, the weed science has assumed great importance. It has made a considerable progress during last 40 years and progressively assuming an independent and significant branch of biological research. Workers in this field are now employed by educational institutions, government agencies, herbicide manufacturers and others. Chemical companies are spending millions of rupees in synthesizing, screening and developing new herbicides with trade names. With the availability of effective herbicides, there is an urgent need to bring together the present concept and modern techniques of weed control, along with complete enumeration of weed problems; so as to cope with innumerable weed species, grown under various environments. However, since conditions vary as to methods of application and environmental conditions, the dose may be adjusted according to the need and

to be applied judiciously, based on the instructions printed on the label of the herbicides.

The author has attempted to present the subject in an useful way and readable manner so as to understand easily. It will be helpful to research workers, college and University teachers, Vocational teachers, extension specialists, herbicide sale representatives and progressive farmers. Weed control practices suggested are based on research reports of several workers in this field and his own experience. However, farmers are not quite familiar to the use of herbicides as is the case of pesticides and fungicides; only because they do not have adequate knowledge in the techniques of application, availability and also cost involvement.

The book contains classification and description of monocot, dicot, aquatic and parasitic weeds; reproduction and dissemination of weeds, allelopathy, weed control methods, classification of herbicides and mode of herbicidal action; selective weed control in field crops; plantations and Horticultural crops, grass lands and ornamentals; residual effect of herbicides, along with useful illustrations.

A couple of vary good text books on weed science from India and abroad are available which are being used as guides to teach weed science courses. However, this book is a practical guide, provided with up-to-date information in a comprehensive and understandable manner, dealing with all the practical aspects.

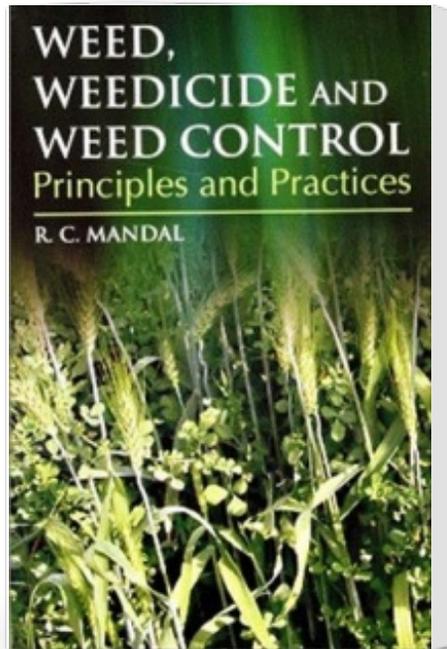
It is a great pleasure to express my sincere thanks to Dr. R. D. Iyer, Head of Genetics Division, Central Plantation Crops Research Institute, Kasaragod who took keen interest in reading the chapters to make it technically correct. My sincere gratitude is due to all the Indian and foreign authors and weed science workers whose contributions, have been reflected in this volume. Due acknowledgements have been given to those works and workers at the appropriate place.

R. C. Mandal

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