
Since 1962, when the worldwide recognized book, The Silent Spring, on the potential environmental impact of extensive use of chlorinated hydrocarbons was published by Rachel Carson, concerned societies revisited their views on chemical use in agriculture in general. She mentioned the potential of biological control, including Bacillus thuringiensis as an effective agent for combating different insect attacks.

Biological control of insect pests, plant pathogens and weeds is the only major alternative to the use of pesticides in agriculture and forestry. As with all technologies, there are benefits and risks associated with their introduction. Introductions of living material are always associated with the risk of unwanted side-effects, resulting in permanent establishment of the species, which later may become pests or can be considered as pests due to their invasive habit. In the USA alone more than 100 intentionally introduced crop and ornamental plants have become weeds, including Johnson grass, Mississipi chick corn, goats rue, Crotalaria and water hyacinth. The same happened with the introduction of game animals and fish. No doubt, alternative technology was used by farmers and studied by scientists before introduction. Farmers in South East Asia regularly made powders of dead catterpillers and sprayed them onto the vegetables as protection against insect attack. A baculovirus containing powder serves as a good source for infecting invading pests. It is one of the most studied biological control agents with respect to new technology.

This book concentrates on the biological control of plant diseases and offers natural alternatives to the currently used fungicides, pesticides, herbicides and insecticides that have not only failed to stop pests and pathogens, but have also raised safety and environmental concerns. The editors made a good choice of authors for the different Chapters. They are well recognized experts in their specific fields of interest. The book addresses several important topics like, soil born pathogens, rhizobacteria, manure-based microbes, mycoparasitism, microbial chitinases, gray mold disease, white root, phyllosphere, and the most commonly used Trichoderma species.

The chemophobia which dominates current behavior of society is a major driving force behind the development of alternatives to synthetic agro-chemicals that are effective and economically feasible. The increasing interest in the biological control of plant diseases, pests and weeds as part of an environment-friendly practice to be used in conventional, low-input agriculture and organic farming ensures that this publication will be of wide interest to University teaching and extension plant pathologists. The public, even if it supports organic farming practices, do have concerns about risks associated with the release of microbes into the environment. The major merit of the book is that the authors are openly discussing the problems surrounding biological control, without hiding the potential risks. The book covers the concerns emerging from lower effectivity of the technology, compared to classical chemical plant protection. The majority of the authors are from countries where small-scale farmers have much experience of biological control of vegetables and small fruits. I am confident that as the text is based on strong practical experience of this alternative mode of plant protection. Knowledge and practice are the strong points of this book, which is a good reference resource for agriculturists and horticulturists as well as a valuable resource for students interested in biological control.

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The variety of processes involved in seeds (i.e. reserve deposition and utilization, desiccation tolerance, dormancy and germination) are of interest to both plant physiologist and agriculturists. This book provides an interesting compilation of chapters by 20 international seed scientists. It covers a broad range of topics related to seed physiology, with 13 chapters arranged into four major sections: (1) germination in the soil and stand establishment; (2) dormancy and the behaviour of crop and weed seeds; (3) seed longevity and storage; and (4) industrial quality of seeds. Each chapter covers recent findings in the area, at a basic level and in an applied manner that can be used for the development of increased crop yields and/or improved industrial grain use. Key topics include seed germination, crop emergence and establishment, dormancy, preharvest sprouting, weed seed germination, grain quality, oil crops and malting quality.

In an attempt to offer a slightly different scope to other recent works in the field of seed biology, this book provides valuable information on topics such as the dormancy of crops and weeds, and presents updated information in the field of longevity and conservation of both orthodox and recalcitrant seeds. The case
studies presented also provide information of interest to researchers, students and professionals in the fields of seed science, field crop research, crop science, agronomy and seed technology. The full reference sections accompanying each chapter include both foundation texts and current research and are thus a very useful guide for further reading.

This publication is well laid out and informative, and the reviews related to seed behaviour are particularly interesting. As another reviewer has commented, it provides a “good mix of physiological, genetic, biochemical, and modelling approaches that are applied to seed development, dormancy, germination and composition”.

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S. Shyam, H.N. Verma, S.K. Bhargava, Air Pollution and It's Impact on Plant Growth, New India Publishing Agency, Pitam Pura, New Delhi-111008, India (2006), Price: US $35.00, Hard Cover, 249 pages, 50 tables, 16 figures, E-mail: newindiapublishingagency@gmail.com, ISBN: 81-89422-10-3

A new book, providing technical information on the quantitative estimation of air pollutants and its effects on plants, is always received with great expectation as it could be a valuable resource for research and teaching. Although this book will be of good use to the researcher in the field of air pollution and air pollution impacts, it is spoilt by technical shortcomings.

The book, consisting of 13 Chapters, provides information on the rational basis for air quality management and green belt development. A large part of the information provided is related to air pollution problems and data of India. Key features are Chapters on various sources of air pollution and their effects on plant growth. The problems of urbanisation, the concomitant air pollution and sources of air pollutants are discussed. Furthermore, valuable technical information is given on vehicle emissions. The global status of the major air pollutants in urban air, referring to the major cities of the world, is also given. A Chapter is devoted to heavy metals in the urban environment.

The effect of air pollutants on biotic and abiotic components of the ecosystem is the central theme of the book. Reference is made to air pollution impacts on human health. Of particular importance to plant scientists, is the information provided on effects of air pollution on plants and plant responses with respect to anatomical, physiological and biochemical parameters. Although valuable information is provided, the amount of information and detail offered on the latter topic, however, is disappointing considering the promising title of the book. The important role plants, especially trees, play in maintaining ecological balance by actively participating in the cycling of nutrients and gasses, including air pollutants, thereby intercepting airborne matter, is put into perspective.

Quantifying the impacts of air pollution on plants in the field and under controlled conditions and studying the physiological and biochemical basis of the constraints imposed, is a specialised undertaking. Although this book can not be regarded as complete manual of methods to quantify pollution and impacts, the practical approach adopted by the authors makes it a valuable source for students in this field. In Chapter 10, a case study providing data with respect to monitoring of ambient air pollution levels and accumulation of heavy metals in plants as well as determination of air pollution effects on selected biochemical parameters, is presented. The study plan described in this Chapter, may serve as a guideline for researchers. In Chapter 12 techniques for sampling and quantitative estimation of the major air pollutants and heavy metals as well as some laboratory methods of plant analysis used for assessing impacts, are described. The book concludes with a statement of the Indian standards used for controlling air pollution, in Chapter 13.

Of great concern, however, is the very poor technical editing of the text of the book. This is especially evident in Chapter 12. No uniform system for numbering of figures and tables were used. Most tables and figures do not have numbers nor super- or subscripts. Various language, typing and spelling errors were noted. In many cases, sentence structure leaves much to be desired. This lack of uniformity also applies to the arrangement and layout of the text and the choice of headings used. The inconsistency in the choice and formatting of the headings causes great confusion to the reader. With all these obvious mistakes in the text formatting the reader can’t help but doubt the accuracy of the technical information. As the authors are established, internationally acknowledged academics and scientists in the fields of toxicology, environmental pollution (Shilpa Shyam), botany, virology, microbiology (HN Verma), chemistry and industrial toxicology (SK Bhargava), it is disappointing to see that the book is produced so amateurishly.

Despite above mentioned shortcomings, the information provided makes a welcome contribution to the field of monitoring air pollution levels and studying its impacts on plants.

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