

# SEED BORNE DISEASES ECOFRIENDLY MANAGEMENT

*Editors*

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**SCIENTIFIC PUBLISHERS (INDIA)**

P.O. BOX 91

JODHPUR

*Published by:*

Scientific Publishers (India)

5-A, New Pali Road, P.O. Box 91

Jodhpur - 342 001

E-mail: [info@scientificpub.com](mailto:info@scientificpub.com)

[www.scientificpub.com](http://www.scientificpub.com)

Print: 2012

ISBN: 978-81-7233-783-4

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Lasertype set: Rajesh Ojha

Printed in India

## PREFACE

The initial handful of seeds obtained from selected individual plants of a particular variety, for the purpose of purifying and maintaining that variety, by the originating plant breeder and its further multiplication under his own supervision is very essential. Seed deterioration is a major problem in different parts of the world. India being primarily an agrarian country suffers from various fungal, bacterial, viral pathogens and insect pests. The losses become manifold when environmental conditions are favourable. The damage to the seeds can be controlled by proper storage conditions and collecting seed in healthy condition. Fungal diseases like rusts and smuts are within control by adoption of modern technologies but a greater effort is required to make these control measures more effective. The most significant change in the field of Plant Protection Research during the last two decades is the emphasis on non-conventional methods of plant protection. Efforts are on to introduce novel concepts in microbial ecology and agricultural biotechnology. The eminent Indian scientist Dr. Y.L. Nene (1999) said, “Since the time humans practiced crop husbandry, they must have been conscious of the importance of seed”. Documents supporting such awareness are listed in holly books for Hindus *i.e.* Vedas and Puranas :

**Om annpate anyasya no dehi anmivashyah sushminah.**

**Pra pra dataram tarish urjam no dhehi dwipade chatushpade.**

Yajur 11-83

Good food is very essential for the progress of any country, the prayer says “O Lord of food! may you provide stimulating and non-injurious food to us. May you increase the bestower in wealth. May you provide food and energy to our men and animals.” India’s food grain production will have to touch 490 million tones in another 20 years against the 200 million tonnes it produces today. Thus India will have to replicate green revolution, which is possible by introduction of genetically modified crops and reducing the post harvest losses by different methods including ecofriendly management.

Growers loose crops like potato, onion and garlic as well as various fruits due to their high water content. Increasing the water content of tissue leads to susceptibility caused by soft rot pathogens. The pectic substances may

differ considerably in composition and these may affect susceptibility of composition. The structure of pectic substances determines the cell wall consistency. Calcium, Boron and growth regulator may alter their susceptibility to attack. Parenchyma may contain inhibitors of pectic enzymes which may retard or prevent degradation of pectic substances in the cell walls.

The present book **Seed-borne diseases: Eco-friendly management** is a compilation of 20 different chapters written by experts in the field. We thank all the authors for contributing their articles in a very short time. The book covers pests like insects, aphids, sucker thrips, and mites etc. besides damage caused by fungal, bacterial and viral pathogens. The authors have tried to explain that besides biotechnological approaches like production of GM crops there are various methods which should be used as an integrated approach to control seed borne and seedling diseases. We take this opportunity to thank all the contributors for giving their valuable papers and hope that the book will be useful to researchers, progressive farmers and all those involved in seed industry to maintain good quality of seeds. We thank to the staff of the Botany Department for assisting in compilation of the book, particularly Mrs. R. Titus for typing some papers. We thank Shri Pawan Kumar to take up this project and publish the volume nicely.

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*Part I*

**SEED BORNE DISEASES:  
ECOFRIENDLY MANAGEMENT**

