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Phytopathology/Genes & Diseases in Plants

Surendra K Gond

Department of Botany, Visva-Bharati, Santiniketan-731235, West Bengal, India

Editorial

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*For Correspondence

Surendra K Gond, Department of Botany, Visva-Bharati, Santiniketan-731235, West Bengal, India, Tel: 3463 262672

E-mail: surendragond@gmail.com

INTRODUCTION

The most of the human population on earth depends on vegetables and cereals. The continuous growing human population needs a food security. Food security will only be achieved by managing our crop from pests, pathogens, environmental damage and proper storage. The devastating effect of crop pathogens have showed us many world famines like Irish famine, Bengal famine in past. The research on plant disease management is one of the most important topics in botanical sciences. Phytopathology is an area of plant biology where plant interacts with various kinds of biotic and abiotic stresses. These interactions are governed by environmental factors and leading to disease symptoms. The study of interactions of plant-pathogens is continuously going on and we can find a number of publications based on morphological studies. There is an urgent need on the indepth study of plant diseases including molecular and genetic approaches. To understand the mechanism of pathogenesis we should look to investigate the signalling between plant and pathogens at biochemical and molecular basis. The host expresses pathogenesis related proteins (PR proteins) in form defence molecules. The role of certain PR proteins is still under speculations. The plant pathogen resistant genes need to be explored by conversional plant breeding as well as applying modern biotechnological tools. The external environment of host plays a major role for the establishment of plant disease. There are several abiotic or environment stresses which do not favour for the optimum growth of plant. We also promote the research on the molecular pathways involved in interaction of plant with abiotic stresses.

The plant pathology also covers the disease management of crop grains and fruits after harvest at the time of storage. The lack of good quality storage go downs in developing countries also spoil huge amount of grains. The infection of post-harvest pathogens is also a major obstacle in managing plant diseases. The research on post-harvest disease management needs to be promoted. We also encourage the research on genetic and molecular biology of microbes which survive as latent pathogens.

The theme of this special issue "Phytopathology/Genes & Diseases in Plants" is very much related to the current scenario of plant biology. A number of research projects are running on plant pathology by botanical and agricultural scientists. The ultimate aim of this issue is to bring together the scientific community who are working on basic and fundamental of plant disease as well as plant microbe interactions at genetic and molecular levels.