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| Nota di contenuto | Preface -- Acknowledgement -- 1. Introduction -- 2. Cultural practices influencing biological management of crop diseases -- 3. Physical techniques for biological crop disease management -- 4. Biological control of microbial plant pathogens in alternative sources of infection -- 5. Development of formulations and commercialization of biological products -- 6. Biological disease management systems for agricultural crops -- 7. Biological disease management systems for horticultural crops. |
| Sommario/riassunto | Effectiveness of biological management of diseases may depend on the nature of interactions between the pathogens and other organisms and the plants. Because of development of resistance in pathogens to fungicides and bactericides, selection of strains of biocontrol agents (BCAs) showing resistance to synthetic chemicals is essential to to restrict use of the chemicals. Microbial plant pathogens and the antagonists present in the soil and on the plant surfaces are influenced by the cultural practices such as ploughing, nutrients applied, date of planting and harvesting, plant spacing, irrigation and harvest operations. Crop sanitation is a simple and important practice to eliminate or reduce the pathogen inoculum. It is possible to reduce disease incidence and intensity by including appropriate rotational crops which are resistant/immune to the target pathogen. Intercropping has been shown to be effective in reducing the incidence |

of virus diseases. Application of physical and chemical techniques involving the use of heat, solarization and irradiation may reduce the pathogen population or weaken potential of pathogens present in seeds, plants and soil. Irradiation with UV-C has favorable effect on fruits and vegetables which exhibit resistance to postharvest pathogens. Seed treatment with UV-C reduces infection by seedborne pathogens too. Some of the fungal pathogens have been identified as mycoherbicides. Entomopathogenic fungi effective against important groups of insects functioning as vectors of viruses have been identified. Two types of formulations are made from microbial antagonists. Liquid formulations as flowable or aqueous suspensions in water, oils or emulsions are prepared. Dry formulation products are available as wettable powders, dusts or granules. The bioproducts are applied to soil, seeds, propagative plant materials, whole plants and harvested produce as protective or curative treatments. Biological disease management systems for agricultural and horticultural crops have been developed by integrating strategies with synergistic effects on each other. Efforts to develop integrated systems of disease management have been scarce. Methods of integrating management strategies for diseases affecting agricultural and horticultural crops and the achievement of high levels of disease control are discussed. Protocols for isolation/ identification and assessing the biocontrol activities of biotic and abiotic biocontrol agents provided in relevant chapters will be useful for researchers and teachers.