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Sommario/riassunto

Many of the world's most important food crops are grown in the tropics and the majority of them are affected with one or another virus or viroid diseases. Plant virus and sub-viral agents are one of the factors that affect productivity and cause vast economic losses to staple crops across the tropics. Sustained efforts are being made in universities and research institutions of both state and central facilities, and have resulted in dramatic success in managing some of the most devastating virus diseases. However, emergence of new viruses and strains of existing viruses, along with changing contexts due to agricultural intensification and climate change resulted in creating new challenges and demanding even greater effort to overcome hurdles to increase agricultural productivity, food availability and economic development. Methods for the detection and identification of viruses and virus-like diseases in plants and vectors play a critical role in plant virus epidemiology and in turn plant virus management. Advancements in serological and molecular techniques have greatly improved the speed and accuracy of virus and sub-viral pathogen identification. To keep up with the constant threat of emerging and re-emerging plant viruses, it is necessary to identify, predict and monitor sources of outbreaks at the worldwide level to minimize small infection proportions from becoming devastating pandemics. Diagnosis of plant virus and sub-viral agents and their prevention / management is an integral part of agricultural production systems and regulatory frame works that exist in almost all tropical countries. Plant virus epidemiology provides powerful tools to investigate key factors that contribute to virus epidemics in agricultural crops. These epidemiological approaches help to guide decisions regarding plant protection strategies. The dynamics of a particular virus disease epidemic depends on the number of vectors and their activity, sources of virus and vectors, climatic conditions and a complex series of virus - plant - vector interactions. The importance of epidemiology needs to be realized for the management of virus diseases in an integrated disease management program (IPM) and also for generating information on pest / disease-free areas and for pest risk analysis, which is an obligation for our international trade. Even though there are number of virus and virus-like disease management measures, whenever individually are used alone, the benefits received are very small and may become infective with time. On other hand, in an integrated approach, when different ways of virus management measures are

combined and used together, there would be effective overall reduction or control of virus and sub-viral diseases. Integrated virus management strategies are to be comprehensive, effective and should protect farmers from economic hardships due to crop losses because of virus and virus-like diseases. The virus management strategies developed must be robust and involve minimum extra expenditure. This book is an excellent latest source of information for those interested in plant virus teaching, research and virus management. It is also invaluable resource for research workers, educators, students of plant virology, plant pathology, plant breeding, biotechnology, molecular biology.
