

New and Emerging Virus Transmitted Diseases in Vegetable Crops: Threats and their Integrated Management

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Abstract: Vegetables play a vital role in the food as well as nutritional security of mankind. Now-a-days, as a result of climate change, it is observed that vegetable production is significantly hampered because of a number of new and emerging diseases that are mainly caused by several viruses. Since last decade, several viruses are emerging out which are generally transmitted by the insect- vectors like aphids, whitefly, thrips and jassids. Whitefly transmitted Gemini viruses (Genus-Begomovirus) are a major concern in cucurbitaceous crop production in the present time whereas, potyvirus, transmitted by aphids, is a serious threat to vegetables like chilli, pepper and tomato. Cucumber mosaic virus is having a wide host range in cucurbits and also affects crops like lettuce, spinach and tomato. Thrips transmit tospovirus i.e., tomato spotted wilt virus which cause a severe damage in Solanaceae crops. These new type of viral diseases which are transmitted by the insect vectors are very difficult to control. Continuous practice of conventional methods of farming making the crops more prone to the attack of several insect vectors which ultimately spread the devastating viral diseases which can sometime cause even up to 100 percent crop loss. Inorder to control or manage the vectors, farmers are mostly habituated with application of insecticides in an indiscriminate way which in turn forms chemical residues in the soil as well as in the particular crop beyond the acceptable limit. Consumption of such type of crops for a prolonged time may cause fatal diseases like cancer in human body. Therefore, there is a dire need to focus on integrated management practices of the insect vectors as a part of sustainable agriculture.

Keywords: Vegetables, emerging diseases, insect vectors, integrated management.

With the burgeoning population, the demand for food across the world is also increasing. Along with this, as the resources are declining, it is important to maintain the nutritional standards during food production. Vegetables play a major role in the nutritional security as it is the cheapest and rich source of minerals and vitamins which can complement the cereals in daily diet. Fresh vegetables are grown year round in both rural and urban areas to fulfill the increasing demand. Brinjal, chilli, tomato, onion, okra, cucurbits, leguminous and leafy vegetables are economically important and mostly grown crops in India. But, almost all the vegetable crops are very much