Present Status of Virus and Virus-Like Diseases of Citrus in Nepal

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ABSTRACT. Since the importation of citrus from India in the 1960s, citrus huanglongbing (greening) and citrus tristeza virus have become widespread in Nepal. Other virus and virus-like diseases have also appeared and this paper reports on the incidence of exocortis, cachexia, woody gall and budunion crease. Symptoms of an impietratura-like disease were also observed in field trees.

Citrus virus and virus-like diseases were unknown in Nepal prior to the importation of grafted citrus from Saharanpur (Uttar Pradesh) in India in the 1960's. Citrus huanglongbing (HLB) (greening) was first reported in Nepal in 1967 in the Pokhara Valley (1, 3), and the disease has since spread to all citrus growing districts (5). Citrus tristeza virus (CTV) was first recorded in Nepal in 1971 (2). Subsequent surveys have shown CTV to be widespread causing a decline in acid limes (4). Since then, other virus and virus-like diseases have been observed and this paper reports on their current status.

Recently, bark scaling symptoms caused by exocortis have been observed on trifoliate rootstocks of four 10- to 12-yr-old sweet orange trees in Pokhara and Dhankuta. A more detailed survey is currently underway including an indexing study. Symptoms of cachexia have been found on two 10- to 12-yr-old tangelo trees at the Pokhara Experiment Station.

Several citrus varieties have been found exhibiting typical woody gall symptoms. These include Volkamer lemon, kagzi lime, Rough lemon and Kamala orange.

A decline of 5- to 6-yr-old sweet orange trees on Rough lemon rootstock has been associated with a budunion crease. Fifteen trees out of 50 showed distinct creasing. This symptom resembles that reported elsewhere (6).

Impietratura-like symptoms were observed on Junar, a variety of sweet orange. The affected fruits were hard and possess gum pockets in the albedo. The disease is known locally as Khotia disease. Further investigations are planned.

It is possible that the material imported from India was infected with various agents, and these have been spread by distribution to growers along with transmission of insect-borne agents such as HLB, CTV and woody gall. The practice of shoot-tip grafting to eliminate viruses from budwood sources has been introduced into Nepal (7) and it is hoped that further spread of these diseases will be prevented.

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