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STUDIES ON LEAF CURL OF TOMATO (*LYCOPERSICON ESCULENTUM*)

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The condition of tomato referred to as leaf curl is prevalent in the tomato growing areas of the Kandy District, being more severe during the Yala season than in Maha. Its characteristic symptoms are a curling of leaflets, puckering, reduction of leaf size and vein clearing. Affected plants are stunted, especially if the condition sets in during the early stages of growth when yields are markedly reduced.

Two components of the condition have been distinguished, one viral associated with the whitefly *Bemisia tabaci*, and the other "physiological" associated with environmental factors. The former is more damaging; plants usually recover from the effects of the latter with a change of conditions.

In transmission studies, the viral component could not be transmitted by sap but it was successfully transmitted by grafting and by whiteflies. Whiteflies were able to acquire the virus from a diseased source in 30 min and transmit the virus after an incubation period of 4 h. The minimum inoculation feeding period was 1 h. A single whitefly was able to transmit the virus. Whiteflies, after acquiring the virus, remained infective for life. Nymphs were also able to transmit the virus though less efficiently than adults. Female whiteflies appeared to be more efficient transmitters than males.

A number of plant species were investigated as potential hosts of the virus. Six of those infected, *Nicotiana tabacum*, *Nicotiana glutinosa*, *Vernonia cinerea*, *Acanthospermum hispidum* and *Sida acuta* reacted with leaf curling symptoms. *Acalypha indica* developed a yellow mosaic. The common weed *Acanthospermum hispidum* was most easily infected. Two other common weeds, *Ageratum conyzoides* and *Urena lobata* were not infected.