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Molecular based diagnosis of Little Leaf Phytoplasma in Brinjal (*Solanum melangina* L.)

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Little leaf condition in Brinjal (BLL) is widespread in various agro-ecological zones especially in the dry zone in Sri Lanka. Affected Brinjal plants appear stunt having reduced leaf sizes and short terminal branches that results from reduced inter-nodal lengths. Unusual rosette-like structures at the tips of stems and rarely from the nodes also characterize BLL condition. No flowering occurs when BLL is expressed before maturity and in lately appearing plants though flowering and fruiting may continue they rapidly become withered and fall prematurely.

Cause of the disease is yet to be identified in Sri Lanka. The symptoms, however closely resemble Phytoplasma-borne BLL reported in other countries. This paper communicates results of a preliminary investigation made towards identifying the causative agent of BLL, using Polymerarse Chain Reaction (PCR) technique. A potential vector of BLL was also screened by the same technique.

Total DNA was extracted from plant samples and insects using standard protocols. DNA obtained from samples of the BLL affected Brinjal plants; a Leaf hopper species, which frequently occur in BLL affected Brinjal plants; healthy Brinjal (negative control) plants; grassy shoot affected sugar cane (GSSC) plants (positive control) were subjected for PCR diagnosis using the phytoplasma universal primer pair Pc399/P1694. Subsequently the PCR products were digested with AluI and Mse1 and studied by electrophoresis on 1.5% agarose.

DNA from all the BLL affected samples and that from grassy shoot affected sugar cane plants amplified a band around 1.2 kb in the PCR using Pc399/P1694 yet no amplified bands were observed for DNA obtained either from healthy Brinjal or from insects. Restriction digestion patterns of the BLL PCR products were distinctive to that of grassy shoot affected sugar cane, exemplifying the BLL phytoplasma identity.

The results attest for a correlation between occurrence of phytoplasma and the BLL condition, and the associated phytoplasma is distinctive to GSSC.

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