

Short Report

***Rhizobium radiobacter* AS THE INCITANT OF STEM AND CROWN GALL on *Ficus benjamina* IN MAZANDARAN PROVINCE ***

K. ROUHRAZI and H. RAHIMIAN

Dept. of Plant Protection, Sari Agricultural Science and Natural Resources University, Sari.

Abstract

Ficus benjamina commonly known as the Weeping Fig or Benjamin's Fig, is a species of Moraceae, native to south and southeast Asia and Australia. It is a topiary tree reaching 15 metres in height in natural conditions. *Ficus benjamina* is planted as a potted plant and as an ornamental shrub in gardens in Mazandaran and elsewhere in the country.

Stem and crown gall symptoms were observed on *Ficus benjamina* in the greenhouses in Mazandaran. The affected tissues were transferred to the laboratory and the galls were washed in running water and surface sterilized for a few minutes in 1% sodium hypochlorite solution. The galls were rinsed with several changes of sterile distilled water (SDW), crushed in SDW and were left for 30 minutes at room temperature. A few drops of the suspension were streaked onto plates of PDA (Potato dextrose agar). The plates were incubated at 28°C. Colonies similar to *Agrobacterium* (white, mucoid and convex colonies) were selected. The strains were inoculated on the stems of tomato and the strains that produced galls three weeks after inoculation were selected.

The strains produced ketolactose from lactose, Arabinose, sorbose, melezitose, dulcitol, fructose, sorbitol, cellobiose, xylose, raffinose, xylitol, lactose, acetate, lactate, D-tartrate and propionate were used by all strains whereas erythritol, valine, tyrosine, L-tartrate, malonate and citrate were used by none of them tested. All strains amplified a 224 bp fragment of the VirD2 gene in PCR reactions using VirD2A/VirD2C primers. In BOX-PCR, the fingerprints of the strains from *Ficus benjamina* showed 60% and in Is50-PCR 75% similarity to the reference strain of *Agrobacterium radiobacter* ICMP (Intern. Collection of Microorg. from plants) 8586.

Based on morphological, physiological and biochemical properties and the results of the PCR tests, the strains were identified as *Rhizobium radiobacter*.

In a previous report, *Rhizobium larrymoorei* was identified as the incitant of stem and crown gall on *Ficus benjamina* in Mazandaran province (Ghasemi, *et al.* 2006. Iran. J. Plant Path. Vol. 42. P 197), therefore, confirmation of the presence of this species needs further investigation.