

P13: Towards restricting the spread of bacterial diseases in Palestine: Diagnosis of *Agrobacterium tumefaciens* in soil samples from stone fruit nurseries in three regions of the West Bank

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Abstract

Agrobacterium tumefaciens is a soil borne pathogen infecting a wide range of cultivated crops and causes the crown gall disease (Jun Z et al 2000, Matthew A. E et al 2003). This disease causes a remarkable economic loss, especially when it affects trees (Kennedy B. et al 1980). A large part of the loss could be prevented if appropriate phytosanitary strategies are employed. Continuous testing of the cultivation medium and the seedlings for the presence of this pathogen followed by an eradication of the infected material would have a crucial role in restricting the spread of this disease.

Soil samples were collected from different commercial stone fruit nurseries located in three regions; north, midwest, and south of the West Bank and they were tested for *A. tumefaciens*. Aliquots of 100 µl from soil suspension were inoculated on semi-selective media. Typical colonies developed on this selective medium were subjected to molecular based diagnosis for *A. tumefaciens* using PCR techniques. The diagnosis employed specific primers for the *ipt* gene located on the Ti plasmid (T-DNA) of the *A. tumefaciens* (Haas J.H. et al 1995, Cubero J. 1999)

A total of 200 samples from all areas were tested. In the North, 21 out of 129 samples were found to be infected. In the South, 11 out of 59 samples showed infection with *Agrobacterium*. In the Midwest, however, only 12 samples were tested and only one of them was infected. The percentage of infection is almost at the same level in the North and the South, 16 and 18%, respectively. Whereas, in the Midwest, the infection level was much lower, but this value is not reliable due to the small number of tested samples.

In conclusion, the results indicate a remarkable rate of infection with *Agrobacterium tumefaciens* in commercial nurseries producing stone fruit seedlings. This implies that a more severe monitoring measures should be implemented by the Palestinian Ministry of Agriculture to assure the use of certified plant sources and sterilized culture media.

References

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P14: The Antibacterial Activity of Aqueous Extraction of *Rhus glabra* (Smooth Sumac)

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Abstract

The Antibacterial activity of Smooth Sumac (*Rhus glabra*) leaves aqueous extract was examined using agar disc diffusion methods against six bacteria (*Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli*, *Proteus mirabilis*, *Klebsiella pneumonia*, *Pseudomonas aeruginosa*). The extract of plant had inhibitory effect at various concentration (4%,5%,7%) against both Gram (+)and Gram (-) bacteria. Based on these results of this study the extract of Sumac (*Rhus glabra*) could be considered as potential antibacterial agents which confirms its use in folk medicine.