

## STUDY ON CANKER DISEASE OF STONE FRUITS AND ANTIBACTERIAL EFFECTS OF SOME PLANT ESSENTIALS ON ITS CAUSAL AGENT IN KERMAN PROVINCE \*

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### Abstract

Symptoms of stone fruits canker were observed in some part of Kerman province. Strains in which the gram reaction was negative were investigated based on physiological and biochemical characteristics. Some tested strains were positive for levan production, hydrolysis of tween 80, gelatin, casein, arbutin, catalase, fluorescent pigment production, tobacco HR and tolerant to 5% NaCl but negative for oxidase, urease, hydrolysis of starch, arginine dihydrolase, growth at 37<sup>0</sup> C, potato rot, indole production and reduction of nitrate to nitrite. These strains produced acid from glucose, fructose, cellobiose, sucrose, galactose, mannose, mannitol, xylose, sorbitol, inositol and arabinose but did not produce acid from lactose, maltose and D-tartarate. Thses strains prevented the growth of *Geotrichum candidum* by toxin production and PCR amplification with the *syrB* primers yielded the expected 720 bp fragment from all pathogenic strains. The electrophoretic profiles of the cell proteins of the strains were closely similar to reference strain, *Pseudomonas syringae* pv. *syringae*(IBSBF 451). The pathogenicity of representative strains was improved by injection of suspension of 10<sup>6</sup> cell/ml to branches tip and flowing symptoms observation and re-isolation of agent. The isolates were determinate as *Pseudomonas syringae* pv. *syringae* based on phonotypical futures and sequences of ITS. Antibacterial effect of plant extracted was studied under laboratory conditions on bacterial isolates. The results were compared with effects of 13 well known antibiotics. Results indicating that among used antibiotics, Tetracycline, Oxytetracycline and Doxycycline have significant effect on the growth of all strains but, all the strains showed resistance to Penicillin, and. This study revealed that all the extracts have antibacterial effect and among them extracts of *Ferula assa-foetida* and *Rosmarinus officinalis* have the best effect that is comparable to the effect of Tetracycline.

**Keywords:** *Pseudomonas syringae*, Bacterial Canker of stone fruits, Identification, Plant essentials, Kerman.

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