

## ISOLATION OF FLUORESCENT *PSEUDOMONAS* STRAINS WITH BIOCONTROL ABILITIES FROM GENTLY ACIDIC AND ALKALINE SOILS

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Biopesticides are playing an increasing role in agriculture to protect the cultivated plants against plant pathogenic microorganisms. Fluorescent pseudomonads have been thoroughly examined, as they proved to be one of the most promising groups against both plant pathogenic bacteria and fungi. They produce secondary metabolites such as antibiotics, siderophores, phytohormones and various volatile compounds. In this study, 56 fluorescent *Pseudomonas* strains were isolated from 28 different alkaline and acidic soil samples on selective media. The isolates were identified by sequence analysis of an RNA polymerase beta subunit (*rpoB*) gene fragment. Identification procedure revealed that the isolates were *P. chlororaphis*, *P. fluorescens*, *P. frederiksbergensis*, *P. kilonensis*, *P. lini*, *P. oleovorans* and *P. putida*. The extracellular enzyme activities of the isolated strains were also examined, and low activities of extracellular cellobiosidases, xylanases,  $\beta$ -glucosidases and phosphatases could be detected in the case of 4 strains. The selected *Pseudomonas* strains were tested *in vitro* against 9 plant pathogen fungi (*Alternaria solani*, *Botrytis cinerea*, *Colletotrichum gloeosporioides*, *Fusarium culmorum*, *Fusarium graminearum*, *Fusarium solani*, *Gaeumannomyces graminis*, *Sclerotinia sclerotiorum* and *Phoma cucurbitacearum*). Out of the isolates, 20 strains could inhibit the growth of one or more plant pathogenic fungi. The antagonistic *Pseudomonas* strains proved to belong to the species *P. fluorescens* and *P. chlororaphis*, and may have application potential for the purposes of biological control.

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