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**Suppression of  
*Fusarium oxysporum*  
infection in oat (*Avena*  
*sativa*) seeds by  
rhizosphere-  
associated  
pseudomonades**

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The preference to use biological control agents to control plant diseases instead of fungicides has arisen worldwide. The aim of this research was to isolate and characterise pseudomonades effective against *Fusarium oxysporum* and to test its potential in improving infected oat seed germination *in vitro*. Isolation of bacteria was performed from rhizosphere of *Vigna radiata* and *Medicago sativa* on King's B medium. Molecular characterisation of isolates was done based on the 16S rRNA sequence (using P<sub>0</sub>/P<sub>6</sub> primers), while the presence of phenazine genes was tested by PCR method using PHZef/PHZer primers. Antifungal activity of bacterial isolates against *F. oxysporum*, as well as the production of HCN and siderophores was tested *in vitro*. Potential of selected *Pseudomonas* sp. inoculums to increase relative seed germination index (RSGI, %) of seeds infected with *F. oxysporum* was tested. Two isolates from *V. radiata* (Vig3Psd1 and Vig3Psd2) and two from *M. sativa* (LA1Psd1 and LA1Psd2) rhizosphere were characterised as *Pseudomonas* sp. based on the molecular determination. Production of siderophores was recorded for all tested isolates, with LA1Psd1 as the most potent producer (20 mm halo zone), while the HCN was recorded for Vig3Psd2 and LA1Psd2. The presence of genes for phenazine production was determined only for Vig3Psd2. Inoculation of infected oat seeds with all selected inoculums increased RSGI in a range from 21% (LA1Psd2) to 33% (Vig3Psd2), in comparison to the infected control. The results indicated that inoculum based on Vig3Psd2 has potential to be used in green farming, after further greenhouse and field experiments.