

**SCREENING FOR GENETICAL DIVERSITY TO ACHIEVE RESISTANT GENE IN  
POTATO GENOTYPES TO DRY CANKER *RHIZOCTONIA SOLANI***

Ali Ghaei, Mehdi Nasr Esfahani, Hamed Kamali, Ali Mohammadrezaei, Nasim Adeli  
*Agricultural and Natural Resources Research Center of Isfahan, Department of  
Plant pathology, Isfahan, Iran  
Ali.ghaei64@gmail.com*

**INTRODUCTION**

Genus *Rhizoctonia* is a highly heterogeneous group of filamentous fungi that share similarities in their anamorphic and sterile state. They do not produce asexual spores and the teleomorphic, sexual state occurs only rarely. The group contains several economically important and global plant pathogens like *Rhizoctonia solani*. Anastomosis group 3 (AG-3) is the main *R. solani* group infecting potato worldwide. Thus, to achieve resistant sources and variations in genetical diversity of the population, screening of commercial potato varieties and promising lines of potato were assessed to the disease.

**MATERIALS AND METHODS:** The status of the infection were evaluated based on percent infection, disease severity and scoring scales of the disease, on six disease indexes, 0, 10, 25, 50, 75, and 100 on potato tuber and underground stems.

**RESULTS AND DISCUSSION:** The cultivar Agria and Ramose were the resistance and susceptible respectively, and the rests were placed in between. Whereas, in Fraydan, the cultivar Ceaser was the resistant and then after followed by other cultivar in relatively resistant, tolerance and relatively susceptible. Out of which, Cosima, Mileva, and Concord were the susceptible ones. The compound analysis of Isfahan and Fraydan indicated that Santé was the most resistant one and Concord the most susceptible one in these studies. In total, out of cultivar and promising lines, the lines 396157-15, 397082-4, 397009 and Amrad and Ceaser were the most resistant ones respectively. Whereas, others stood in tolerance and relatively susceptible positions. And, eventually the line and cultivar 397046, 397082-2, Cosima, 397081-13, 396128-1, and 397075-2 were the most susceptible ones in these studies. The mechanism of resistant in potato to *R. solani* genetically, indicating that, Snakin-1 (SN1), a cysteine-rich peptide with broad-spectrum antimicrobial activity was conferred resistance to pathogens in transgenic potatoes previously by other workers. Genetic variants of this gene were cloned from wild and cultivated *Solanum* species. Also, differential expression of 122 and 779 genes, including many well-characterized defense-related genes was detected previously.

*Keywords;* Potato, lines, variety, *Rhizoctonia*, resistant.

**REFERENCES:**

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