

## **ABSTRACT**

Potato represents one of the most important vegetable crops in family Solanaceae. Several fungal diseases attack the foliage system of potato plants during all growth stages. Late blight caused by *Phytophthora infestans* (Mont.) de Bary and early blight caused by *Alternaria solani* (Ell. and Mart.) Jones and Grout, as well as gray mould incited by *Botrytis cinerea* Person are considered the most destructive potato foliar diseases. Three isolates belong to the three tested pathogens were identified and their pathogenic capabilities were determined. Disease severity and varieties reaction against different pathogens were determined under laboratory and greenhouse conditions using detached and intact leaves technique of Valor and Nicola varieties. Plant extracts, different bioagents and commercial biocides, organic acids and chemical treatments were tested against the tested pathogens under laboratory, greenhouse and field conditions. This study detected that bioagents and organic acids were most effect on two potato varieties in different tested seasons when compared with plant extracts and chemical treatments where, increased yield, dry weight, protein content and shelf life of potato tubers.

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