

Abstract

Low-Environmental-Input Bioproducts for Potato Culture [†]

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Introduction: *Rhizoctonia solani* causes major damage to potato crops. An ecological option to combat the effects of this phytopathogenic agent consists of treating the seeds (tubers) with microbial bioproducts based on *Bacillus* sp., previously isolated from the rhizosphere of *Solanum tuberosum* [1–5].

Materials and methods: the tests were carried out in vitro on *Rhizoctonia solani* and in vivo on a *Solanum tuberosum* culture with bioproducts based on *Bacillus* sp., which contained 10⁵ CFU.

Results and discussion: the tests carried out in vitro on *Rhizoctonia solani* with bioproducts based on *Bacillus* sp. showed that these bioproducts have the ability to inhibit the growth of this phytopathogen by about 80%. The tests carried out in vivo on two varieties of *Solanum tuberosum*, in which the microbial bioproducts were applied to the seeds (tubers), revealed that the presence of the studied bioproducts increased the potato plant resistance to this phytopathogen. The incidence of disease caused by this phytopathogen was reduced to about 20% in the treated potato plants compared to the untreated culture, where the incidence of disease can reach 87%. Another advantage of applying bioproducts based on *Bacillus* sp. is increasing the tuber production yield up to 40% compared to the untreated variants.

Conclusions: the obtaining and large-scale use of bioproducts based on *Bacillus* sp. in potato cultures represent an ecological and advantageous option due to their biocontrol and plant growth-promoting properties [6,7].

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