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Induction of systemic resistance by plant growth promoting microorganisms against certain viruses affecting leguminous crops

By

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T H E S I S

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microorganisms against certain viruses affecting leguminous crops**

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Abstract

Two experiments were carried out in the greenhouse (pots) and in the field to investigate the effects of induction of systemic resistance by plant growth promoting microorganisms (*Penicillium simplicissimum* GP17-2, *Fusarium equiseti* GF19-1 and *Trichoderma asperellum* SKT-1), nanosilica and plant extracts against *Bean yellow mosaic virus*. Broad bean cultivar Giza 843 was used as the test plant in these experiments. Plants treated by fungi, nanosilica and plant extract a significant increase in the plant growth, yield and its components as compared with plant non-treated (infected control). Moreover, a decrease in disease severity and ELISA concentration of the virus for plants treated with fungi, plant extracts and nanosilica compared with infected plants (control). RT-PCR rustles plants treated with fungi, plant extracts and nanosilica showed an increase in gene expression compared to non-treated infected plants.

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