Differential expression of Penicillium and Fusarium fungal interaction with three peanut (*Arachis hypogaea* L) varieties

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ABSTRACT

The aim of present study was to evaluate the role of plant growth promoting fungi, *Penicillium sp*. NICS01 and pathogenic fungi, Fusarium sp. on three varieties of peanuts. The seeds of Pungan, Daekwang and Baek-Jung were collected from National Institute of Crop Science, Miryang at Republic of Korea and Fusarium sp. was collected from National Academy of and Penicillium sp. NICS01 was isolated from peanut rhizosphere and identified as plant growth promoting fungi. The peanut seedlings were inoculated with Penicillium sp. NICS01 and Fusarium sp. The plants associated with Penicillium sp. NICS01 showed higher rate of shoot length in all peanut varieties than fungal free plants. Fusarium sp. infected Baek-Jung variety plants by reducing shoot length, while it helped to improve the shoot length in Pungan and Daekwang varieties. The combined treatments of Penicillium sp. NICS01 and Fusarium sp. on peanut plants significant increased the shoot length in all three varieties and it also ameliorated the Fusarium induced shoot length reduction by enhancing shoot length in Baek-Jung variety. The results of this study suggest that exogenous application of Penicillium sp. NICS01 to peanut plants can be useful to improve the plant growth and possible to prevent the pathogenic fungi, Fusarium sp. responses in disease susceptible varieties.

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