

Effect of endophytic fungi *Pirifomospora indica* on some physiologic traits of strawberry under hydroponic culture conditions

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Abstract

Microbial endophytes, which are considered as the most important soil microorganisms, increase the yield of their host plants by creating changes in their genetic, physiological and ecological traits. *Pirifomospora indica* fungus is a member of Sebaciales order, which increases plant biomass and resistance to living and non-living stresses. In this study, effect of different concentrations [0 (control), 80, 160, 250 and 330 spores/ml] of endophytic fungus *P. indica* on plant height, chlorophyll indicator and branching of strawberry, under hydroponic culture, was examined in a completely randomized design with 28 replications. *P. indica* was inoculated by injecting around roots of strawberry plants. Two months after fungal inoculation, plant height and chlorophyll content was measured by using coulisse and SPAD, respectively. Results showed that maximum chlorophyll content, branching and plant height belongs to 330 spores/ml treatment with 15%, 30% and 24.5% increase as compared to control, respectively. Also, there was no significant difference among 80, 160 and 250 spores/ml treatments, while 330 spores/ml treatment was significantly different from other treatments ($P < 0.01$). Therefore, it can be concluded that high concentrations of fungus *P. indica* can affect the abovementioned traits and thus could have a positive effect on strawberry plant's growth and yield.

Keywords: *Pirifomospora indica*, Strawberry, Hydroponic, Endophyte, Chlorophyll indicator, Plant height.

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