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Early seedling growth response of lettuce, tomato and cucumber to *Azospirillum brasilense* inoculated by soaking and drenching

J.S. Mangmang, R. Deaker, G. Rogers

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This study evaluated the effects of three *A. brasilense* strains (i.e. Sp7, Sp7-S and Sp245) on the early seedling growth of lettuce, tomato and cucumber. Seeds were inoculated by soaking and drenching before and after sowing, respectively. Results show that inoculation effect varied greatly with plant species, inoculation methods and PGPR strains which could be dependent on inoculum concentration and IAA (indole-3-acetic acid) production. Generally, the magnitude of inoculation impact on the early growth of vegetables was more pronounced with Sp7-S, followed by Sp245 and Sp7. In particular, Sp7-S and Sp245 strongly enhanced root and shoot growth, germination value and vigour of tomato when inoculated by soaking. Sp245 increased the level of endogenous plant IAA of cucumber and lettuce. Despite the diverse crop responses to inoculation methods, soaking appeared to be a better technique, and majority of the strains demonstrated more consistent beneficial effects on tomato.

Keywords:

PGPR; seedling emergence; *Cucumis sativus*; *Lactuca sativa*; *Lycopersicon esculentum*

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Contact

Ing. Eva Karská

Executive Editor

phone: + 420 227 010 606

e-mail: hortsoci@cazv.cz

Address

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