



ORIGINAL ARTICLE

EFFECT OF PLANT GROWTH-PROMOTING RHIZOBACTERIA (PGPR) ON THE ROOT SYSTEM ARCHITECTURE OF THE MODEL PLANT, *ARABIDOPSIS THALIANA*

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Abstract: Soil bacteria form relationships with the surrounding environment from living organisms such as plants, and this relationship is often reciprocal. That is, these terrestrial bacteria will live on the organic compounds produced by the plant by the roots that will live in the area around the roots known as rhizosphere. However, after feeding it will produce a group of organic compounds that affect the growth of the plant root, which may be hormones or metabolites of secondary metabolites or other organic substances that have the ability to grow the plant root. Therefore, these relationships differ in different bacteria secretions mainly in addition to root secretions that encourage the settlement of certain types of bacteria strains. Each bacterial strain can secrete certain types of vital compounds that help stimulate or inhibit a radical part at the expense of the other, and thus have a special effect on modifying the root architecture. We carried out inoculations of the model plant *Arabidopsis thaliana* with a whole range of rhizobacteria and bacteria. We have shown that they do not have all the same effect on root architecture. We have identified Sp245 and Bradyrhizobium strains as having “contrasting” effects on the architecture of the root system. Analysis of our data suggests that a strain like Sp245 would affect root growth mainly due to the auxin, it secretes while the Bradyrhizobium strains use another signaling pathway.

Key words: Root architecture, Rhizobacteria, PGPR, Analysis of variance (ANOVA).

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