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ENHANCING GROWTH CHARACTERISTICS AND ACCUMULATION POTENTIAL OF BEACH MORNING GLORY (*Ipomoea pes-caprae*) USING *Bacillus subtilis*

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ABSTRACT – This study was carried out to determine the effect of *Bacillus subtilis* to the physical growth characteristics of *Ipomoea pes-caprae* under different nickel concentrations (25, 50, 100 ppm). Plants were stem-cut and pre-planted for seven days, before subjecting to pot experimentation for a duration of three weeks using a completely randomized design with three replications. Results of the study revealed that plants grown in nickel-contaminated soil with *Bacillus subtilis* significantly increased its shoot length (48±2, 42.87±0.81, 39±1.73) and root length (36.53±1.53, 33.33±1.15, 26.17±0.76) compared to the plants grown in nickel-contaminated soil without *Bacillus subtilis;* shoot length (27±1.73, 25.67±0.58, 21±1) and root length (16.67±0.58, 15±3, 11.67±1.53). On the other hand, nickel concentration in the leaves of *I. pes-caprae* was higher in plants with *B. subtilis* (84ppm, 58ppm, 70ppm) compared to the plants without *B.* subtilis (48 ppm, 54 ppm, 82 ppm). *Bacillus subtilis* help *Ipomoea pes-caprae* to grow physically and become resistant even at 100 ppm of nickel concentration, thereby enhancing its accumulation potential to heavy metal. This work suggests that *Ipomoea pes-caprae* is a potential bioaccumulator and *Bacillus subtilis* is one of the most auspicious plant growth promoter rhizobacteria. Further investigation concerning the capability of *I. pes-caprae* as bioaccumulator using different heavy metals is highly recommended.

Keywords: Bioaccumulator, heavy metal contamination, phytoremediation, rhizobacteria

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