Effect of Planting Media on Endophytic Bacterial Diversity and Corn Growth

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ABSTRACT

Interactions between plants and microbiota cannot be avoided and separated. Plant roots internally colonize with various kinds of endophytic bacteria. The colonization that occurs is influenced by many factors, one of which is the ability of endophytic bacteria to form colonies on plants. One of the roles of endophytic bacteria is to produce secondary metabolites like those produced by their host plants. One of the secondary metabolites produced is the hormone indole acetic acid (IAA) which plays a role in cell elongation and enlargement in plants. The aim of this research is to study the effect of planting media on the diversity of root endophytic bacteria in corn plants and to study the effect of planting media on the growth of corn plants. This research is an experimental study designed using a 2 factorial completely randomized design (CRD) which includes different corn varieties and nutrients. There are two varieties of corn plants used, namely bisma and pulut uri. Each treatment consisted of 3 replications. The variables observed included the number of bacterial isolates that were isolated from 40 day old corn roots, corn growth which included plant height, leaf length, number of leaves, leaf chlorophyll content, and testing the ability of bacterial isolates to produce IAA. The results of the research obtained 10 isolates of endophytic bacteria, namely 9 isolates from the bisma variety and 1 isolate from the pulut uri variety. All bacterial isolates were able to produce IAA, and the highest was 50.54 ppm which was obtained from the roots of the Bisma variety corn. Bacterial isolates isolated from the roots of pulut uri were able to produce IAA, but at relatively low levels, namely 9.82. Corn growth was seen from plant height, dry weight and chlorophyll content, the 1:10 fertilizer treatment showed the best compared to the control.

Kata Kunci: *endophytic bacteria, planting media, corn growth*