RINGKASAN

Azospirillum adalah bakteri Gram-negatif, bentuk sel batang, oksidase positif dan termasuk dalam PGPR (*Plant Growth Promoting Rhizobacteria*) yang hidup diperakaran tanaman dan mampu mempengaruhi pertumbuhan tanaman. *Azospirillum* menghasilkan zat pengatur tumbuh auksin berupa IAA dan sitokinin. IAA dan sitokinin yang dihasilkan *Azospirillum* mampu merangsang pertumbuhan akar dan tunas tanaman sehingga dapat digunakan untuk memacu pertumbuhan stek Mawar (*Rosa* sp.).

Tujuan penelitian ini adalah mengetahui pengaruh inokulasi *Azospirillum* spp. terhadap pertumbuhan stek mawar dan mengetahui kemampuan *Azospirillum* spp. dalam menghasilkan zat pengatur tumbuh IAA dan sitokinin. Penelitian dilakukan secara eksperimental dengan menguji isolat *Azospirillum* spp. (HR11, KR13, dan KR66) terhadap pertumbuhan stek mawar (*Rosa* sp.). Parameter penelitian yaitu jumlah tunas, jumlah akar, kolonisasi *Azospirillum* spp. pada akar stek mawar, produksi IAA dan sitokinin.

Hasil penelitian menunjukkan bahwa inokulasi *Azospirillum* spp. mampu meningkatkan pembentukan jumlah tunas dan jumlah akar stek mawar. Hasil pengujian produksi IAA dan sitokinin menunjukan bahwa strain *Azospirillum* spp. KR13 menghasilkan IAA paling banyak yaitu sebesar 27,10 ppm. Sitokinin yang paling banyak dihasilkan oleh strain KR66 sebesar 15,73 ppm. Hasil reisolasi bakteri dari akar stek mawar menunjukan isolat *Azospirillum* spp. mampu mengkoloni akar mawar paling banyak 6,5 x 10^9 CFU/cm (9,31 Log CFU/cm) pada perlakuan KR13.

Kata kunci: *Azospirillum*, IAA, Sitokinin, Stek Mawar, Pertumbuhan

SUMMARY

Azospirillum is a Gram-negative bactery, a stem cell form, a positive oxidase and is included in PGPR (*Plant Growth Promoting Rhizobacteria*) that lived in plant root and capable affecting the growth plant. *Azospirillum* produces growth regulator auxin, IAA and cytokines. IAA and cytokines which produced by *Azsopirillum* are able to stimulate root growth and plant shoots, so it can be used to spur the growth of the Rose cuttings (*Rosa* sp.).

The purpose of this research is to determine the influence of inoculation of *Azospirillum* spp. on the growth of roses cuttings and knowing the ability of *Azospirillum* spp. in producing IAA growth regulators and cytokinins. The experiment was conducted experimentally by testing the isolates of *Azospirillum* spp. (HR11, KR13, and KR66) on the growth of cuttings of roses (*Rosa* sp.). The research parameters were shoot number, root number, *Azospirillum* spp. colonization at root of rose cuttings, IAA production and cytokines.

The results showed that inoculation of *Azospirillum* spp. could increase the number of buds cuttings and the number of roots cuttings of roses. The results of the IAA and cytokinin production tests showed that the strains of *Azospirillum* spp. KR13 produce IAA at most that is equal to 27,10 ppm. The most cytokinin produced by the KR66 strain is 15,73 ppm. The result of bacterial reisolation from the root of the rosebud cuttings showed the isolates of *Azospirillum* spp. able to colonize the roots of roses at 6,5 x 10^9 CFU/cm (9,31 CFU Logs CFU/cm) on the KR13 treatment.

Keywords: *Azospirillum*, IAA, Cytokines, Rose Cutting, Growth