

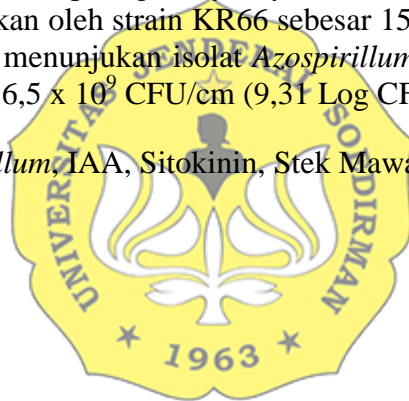
RINGKASAN

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 menunjukkan 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 menunjukkan isolat *Azospirillum* spp. mampu mengkoloni akar mawar paling banyak $6,5 \times 10^9$ CFU/cm (9,31 Log CFU/cm) pada perlakuan KR13.

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



SUMMARY

Azospirillum is a Gram-negative bacterium, 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 *Azospirillum* 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 re-isolation from the root of the rosebud cuttings showed the isolates of *Azospirillum* spp. able to colonize the roots of roses at $6,5 \times 10^9$ CFU/cm (9,31 CFU Logs CFU/cm) on the KR13 treatment.

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

