

Shoumatus Shahroqah. 150311100073. Isolasi dan Karakterisasi *Pseudomonad* Pendar Fluor dari Area Tanaman Jagung (*Zea Mays*) Sumenep Madura.

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ABSTRAK

Karakterisasi bakteri *Pseudomonad* Pendarfluor (PF) telah banyak diketahui dan dilaporkan. Namun, informasi tentang PF sebagai *Plant Growth Promoting Rhizobacteria* (PGPR) dilahan kering seperti di Madura sangat terbatas. Penelitian ini bertujuan untuk mengetahui karakteristik PF sebagai bakteri yang dapat melepaskan fosfat dan menghasilkan IAA pada pH yang berbeda. Sampel tanah diambil dari rhizosfer jagung pada 3 tempat berbeda di Kabupaten Sumenep yakni Desa Karangcempaka Kecamatan Bluto, Desa Palongan Kecamatan Bluto dan Tanjung Kecamatan Saronggi dan diperoleh 15 koloni tunggal. Hasil seleksi berdasarkan uji kualitatif mendapatkan 5 isolat yang optimal dalam menghasilkan IAA dan melarutkan fosfat. Kelima isolat tersebut diuji kualitatif dan kuantitatif dengan variasi pH 6 dan 8. Hasil pengujian kuantitatif IAA pada pH 6 dan 8 isolat K1(2) menghasilkan IAA tertinggi yakni sebesar 5,94 ppm dan 6,06 ppm sedangkan pengujian bakteri pelarut fosfat menghasilkan jumlah fosfat yang tersisa pada akhir inkubasi tertinggi pada pH 6 yakni 3,04 ppm isolat T2(2), pH 8 sebesar 3,73 ppm isolat P1(2). Aplikasi pH pada setiap media kultur menunjukkan bahwa kemampuan PF dalam melarutkan fosfat dan menghasilkan IAA sangat dipengaruhi pH media kultur.

Kata kunci : *Pseudomonad* Pendarfluor, *Plant growth promoting rhizobacteria* (PGPR), rizosfer jagung.

Shoumatus Shahroqah. 150311100073. The Isolation and Characterization of Pseudomonad Pendarfluor from the Area of Corn (*Zea mays*) in Sumenep, Madura.

Guided by: **Dr. Ir. Gita Pawana, M.Si**

ABSTRACT

The characterization of Pseudomonad Pendarfluor (PF) bacteria has been widely known and reported. However, information regarding PF as Plant Growth Promoting Rhizobacteria (PGPR) in dryland such as Madura is very limited. This study aims to determine the characteristics of PF as bacteria which can release phosphate and produce IAA at different pH. Soil samples are collected from the maize rhizosphere at three different places in Sumenep Regency which are Karang Cempaka Village of Bluto District, Palongan Village of Bluto District, and Tanjung Village of Saronggi District and 15 single colonies are obtained. The selection results based on a qualitative test acquired 5 optimal isolates in producing IAA and dissolving phosphate. The five isolates are tested qualitatively and quantitatively by a pH variation of 6 and 8. The results of the quantitative testing of the IAA at pH 6 and 8 of K1 (2) isolate generate the highest IAA which is equal to 5.94 ppm and 6.06 ppm while the phosphate solvent bacterial testing produce the remaining amount of phosphate at the highest end of the incubation at pH 6 which is 3.04 ppm of T2(2) isolate, the pH 8 is 3.73 ppm of P1 (2) isolate. The pH applications in each culture media show that the ability of PF in dissolving phosphate and producing IAA greatly influenced the pH of the culture medium.

Keywords: Pseudomonad Pendarfluor, Plant growth promoting rhizobacteria (PGPR), maize rhizosphere