INTISARI

Bakteri endofit yang ada di dalam tanaman maupun bakteri yang hidup bebas di sekitar perakaran dan tidak bersifat patogen telah menjadi perhatian khusus karena dapat mendukung pertumbuhkembangan tanaman. *Plant Growth Promoting Bacteria* (PGPB) diketahui perannya secara langsung terhadap tanaman inang, antara lain melalui penambatan nitrogen, pelarutan fofat tidak larut, produksi fitohormon dan pengimbasan ketahanan tanaman terhadap penyakit. Penelitian sebelumnya mendapatkan bahwa bakteri endofit strain GMD08 memiliki kemampuan memacu pertumbuhan padi sawah. Namun demikian, karakterisasi bakteri lebih lanjut dan kemampuannya dalam memacu pertumbuhan pada berbagai varietas padi belum dilakukan. Karakterisasi dan identifikasi GMD08 berdasarkan morfologi sel dengan *Transmission Electron Micrograph* dan analisis sekuens 16S rRNA menunjukkan bahwa strain GMD08 termasuk genus Klebsiella dengan tingkat similaritas 99% terhadap *Klebsiella quasipneumoniae* subsp. *similipneumoniae type strain* 07A044. Strain GMD08 memiliki potensi sebagai PGPB dengan kemampuannya dalam melarutkan P dan menghasilkan IAA, meskipun tidak mampu menambat N. Inokulasi strain GMD08 pada 8 varietas padi menunjukkan bahwa tanggapan inokulasi GMD08 pada padi dipengaruhi oleh varietas padi yang digunakan.

Kata kunci : *Klebsiella* sp. GMD08, padi, PGPB

ABSTRACT

Endophytic bacteria present in plants and bacteria that live freely around roots and are not pathogenic have been of particular concern as they support plant growth. Plant Growth Promoting Bacteria (PGPB) is known for its role directly to host plants, among others through nitrogen fixation, dissolving of insoluble phosphate, phytohormon production and induced systemic resistance. Previous studies have found that GMD08 strain endophytic bacterium has the ability to promote the growth of rice. However, further bacterial characterization and its ability to stimulate growth in various rice varieties have not been conducted. Characterization and identification of GMD08 based on cell morphology with Transmission Electron Micrograph and 16S rRNA sequence analysis showed that GMD08 strains belong to Klebsiella genus with 99% similarity to *Klebsiella quasipneumoniae* subsp. *similipneumoniae* type strain 07A044. The GMD08 strain has potential as PGPB with its ability to dissolve P and produce IAA, although it does not fix N. Inoculation of GMD08 strains in 8 rice varieties showed that inoculation response of GMD08 in rice was influenced by rice varieties used.

Keywords : *Klebsiella* sp. GMD08, PGPB, rice