



Corn Growth and Yield Improvement Using Biofertilizer Based on Plant Growth Promoting Bacteria in Acid Soil

Garuda¹, Triadiati^{2,*}, Nisa Rachmania Mubarik²

¹Study Program of Plant Biology, Graduate School, Bogor Agricultural University, Dramaga Campus, Bogor, 16680, Indonesia; ²Departement of Biology, Faculty of Mathematics and Natural Sciences, Bogor Agricultural University, Dramaga Campus, Bogor, 16680, Indonesia

Received November 17, 2014; Accepted December 29, 2014

Abstract: Corn (*Zea mays* L.) is one of the most important crops in the world other than wheat and rice. Currently, agriculture is expected to use as biofertilizer, for increasing crop productivity. Biofertilizer was used in this study consist of strain of *Bacillus*, *Pseudomonas*, *Azospirillum*, and *Azotobacter* which have the ability to produce plant growth regulators, nitrogen fixation, and phosphate solubilizer. The aim of this study was to assess the improvement of corn growth and yield in acid soil by using biofertilizer resulted from improved quality. The combination of biofertilizer and a half dose of NPK fertilizer significantly increase the plant height, the number of leaves, and shelled corn production up to 78.3%, 47.3%, 15.2% respectively, compared to control. In conclusion, the application of biofertilizer reduced of inorganic fertilizer up to 50% in the first growing season and could to improve the acid soil quality.

Key words: *Nitrogen fixation, Azospirillum, Azotobacter, plant growth regulator, soil quality.*

* Corresponding: E-Mail: adiatiipb@gmail.com;