

Firza Hanim Ismadani. 2018. Pengaruh Variasi Dosis *Biofertilizer* terhadap Pertumbuhan dan Produktivitas Tanaman Kedelai Hitam (*Glycine soja* (L.) Merr.). Skripsi ini dibawah bimbingan Drs. Agus Supriyanto, M. Kes. dan Prof. Dr. Ir. Tini Surtiningsih, DEA., Departemen Biologi Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

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### ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian variasi dosis *biofertilizer* terhadap pertumbuhan dan produktivitas kedelai hitam (*Glycine soja* (L.) Merr.) dan nilai RAE (*Relative Agronomic Effectiveness*). Penelitian ini bersifat eksperimental dengan menggunakan rancangan acak lengkap (RAL) dan terdiri atas 8 perlakuan, yaitu B<sup>+</sup> (pemberian pupuk kimia), B<sub>0</sub> (tanpa pemberian pupuk), B<sub>1</sub> (5 mL *biofertilizer*), B<sub>2</sub> (10 mL *biofertilizer*), B<sub>3</sub> (15 mL *biofertilizer*), B<sub>4</sub> (20 mL *biofertilizer*), B<sub>5</sub> (25 mL *biofertilizer*), dan B<sub>6</sub> (30 mL *biofertilizer*). Mikroba dalam *biofertilizer* terdiri atas *Azotobacter*, *Azospirillum*, *Rhizobium*, *Bacillus*, *Pseudomonas*, *Lactobacllus*, *Cellulomonas*, and *Saccharomyces cereviceae*. Data pertumbuhan tanaman meliputi tinggi tanaman, biomassa tanaman, panjang akar, biomassa akar, dan berat bintil akar. Data produktivitas tanaman meliputi berat polong, jumlah polong, berat biji kering, dan berat g/100 biji. Data pertumbuhan dan produktivitas dianalisis menggunakan uji ANOVA (*Analysis of Varians*) satu arah (*One Way Anava*), dilanjutkan dengan uji *Duncan* dengan derajat signifikansi 0,05. Hasil penelitian ini menunjukkan bahwa ada pengaruh nyata pemberian variasi dosis *biofertilizer* terhadap pertumbuhan dan produktivitas kedelai hitam (*Glycine soja* (L.) Merr.). Nilai tertinggi pada semua data pertumbuhan dan produktivitas terdapat pada perlakuan B<sub>6</sub> (30 mL *biofertilizer*) Nilai RAE (*Relative Agronomic Effectiveness*) tertinggi dicapai oleh perlakuan B<sub>6</sub> (30 mL *biofertilizer*) sebesar 509,52 %.

Kata kunci: *Biofertilizer*, pertumbuhan, produktivitas, *Glycine soja* (L.) Merr.

Firza Hanim Ismadani. 2018. The Effect of Variation Doses *Biofertilizer* toward The Growth and Productivity of Black Soybean (*Glycine soja* (L.) Merr.). This script is guided by Drs. Agus Supriyanto, M. Kes. dan Prof. Dr. Ir. Tini Surtiningsih, DEA., Departement of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.

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### ABSTRACT

The purpose of this research was to know the effect of variation doses of *biofertilizer* on growth and productivity of black soybean (*Glycine soja* (L.) Merr.) and the RAE value (*Relative Agronomic Effectiveness*). This research was an experimental with randomized complete design (RCD) and consisted of 8 treatments, it was B+ (chemical fertilizer), B0 (without fertilizer), B1 (5 mL *biofertilizer*), B2 (10 mL *biofertilizer*), B3 (15 mL *biofertilizer*), B4 (20 mL *biofertilizer*), B5 (25 mL *biofertilizer*), and B6 (30 mL *biofertilizer*). Microbes in the *biofertilizer* consist of *Azotobacter*, *Azospirillum*, *Rhizobium*, *Bacillus*, *Pseudomonas*, *Lactobacllus*, *Cellulomonas*, and *Saccharomyces cereviceae*. Data on plant growth include plant height, plant biomass, root length, root biomass, and heavy nodule roots. Plant productivity data include pod weight, pod amount, dry seed weight, and weight of g / 100 seeds. Growth and productivity data were analyzed using one way ANOVA (*Analysis of Variance*) test, followed by Duncan test with a degree of significance 0.05. The results of this study showed that there are different effects of variation doses of *biofertilizer* on growth and productivity of black soybean (*Glycine soja* (L.) Merr.). The highest values of all growth and productivity data were found in the B6 treatment (30 mL *biofertilizer*). The highest RAE (*Relative Agronomic Effectiveness*) value was achieved by treatment of B6 (30 mL *biofertilizer*) 509.52%.

Key words: *Biofertilizer*, growth, produtivity, *Glycine soja* (L.) Merr.