

Neichita Ayu, 2012, **The Effects of Biofertilizer Application on Growth and Yield of Peanut (*Arachis hypogaea*) Crops Production.** This thesis under the guidance of Drs. Agus Supriyanto, M.Kes and Tri Nurhariyati, S.Si., M.Kes. Biology Department, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

This study aims to determine the effect of frequency of fertilizer application, concentration of fertilizer, and the interaction of both on growth and yield of peanut (*Arachis hypogaea*) crop production. Growth parameter is observed fresh weight of plant and fresh weight of plant root nodules. While the output parameter is observed dry weight of pods and dry weight of plant seeds. This aims factorial experimental design with 3x4 so that there were 12 treatments with 3 replication with each replication consisting of 1 plant each polybag. The treatment given consisted of two factors. The first factor which is the frequency of biofertilizers namely F1 (1 time of fertilizer application at the beginning of the growing season), F2 (2 times of fertilizer application, given at the time the plants were 21 and 35 days after planting (DAP)), F3 (3 times of fertilizer application, given by 10, 20, 30 DAP). The second factor which is the concentration of the biofertilizer namely KO (without fertilizer), K1 (with chemical fertilizers), K5 (biofertilizer 5 mL/plant), K10 (10 mL biofertilizers/plant). Normal and homogeneous data were analyzed using 2-way ANOVA test with significance level 0,05 followed by *Duncan* test, while for the abnormal data and not homogeneous data were analyzed using *Kruskal-Wallis* test with significance level 0,05 followed by *Mann-Whitney* test . The study result shows that the frequency of treatment had no effect on growth and yield of peanut (*Arachis hypogaea*) crop production when it analyzed with ANOVA. While for the concentration of fertilizer affect the growth of the fresh weight of plants, but not affect on fresh weight of plant root nodules. In the K1 (with chemical fertilizers) gives the best result of the wet weight of plants with the average of 128,910 g and followed by K5 (biofertilizer 5 mL/plant) weighing 112,979 g, but both are not significant. And for the treatment of the interaction between frequency and concentration had no effect on growth and yield of peanut crop production.

Key words: biofertilizers, plant peanuts (*Arachis hypogaea*), plant growth, crop production.