Effect of super nitro plus and bio super phosphate biofertilizers on morphological and physiological characteristics of basil (*Ocimum basilicum* L.)

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(Received: 14 July 2013 ; Accepted: 2 July 2015)

Abstract

Using bacteria for producing plant nutrients, applying proper methods of soil fertility, and nutrition of plants, other than preserving environment and human health, eliminates unnecessary and wasteful use of chemical fertilizers. Thus, in order to achieve this aim, a greenhouse experiment was carried out, based on completely randomized design with three replications, in Damavand city, during 2012, using phosphate-dissolving and nitrogen-fixing bacteria. Treatments were super nitro plus (4 lit/ha), bio super phosphate (2 lit/ha), super nitro plus (4 lit/ha) + bio super phosphate (2lit/ha) simultaneously, and control (no fertilizer). The necessary amount of each fertilizer per pot was calculated and applied. The measured traits consisted of plant height, fresh and dry weight of roots, leaves and stem, root length, stem diameter, number of leaves, leaf area, and concentration of chlorophyll a, chlorophyll b, total chlorophyll and carotenoids. Analysis of variance of data showed that most of the studied traits were affected by super nitro plus and bio super phosphate fertilizers. Results indicated that the experimental treatments significantly increased fresh and dry weight of shoot, chlorophyll a, chlorophyll b and total chlorophyll content as compared to control treatment.

Keywords: Medicinal plants, Biofertilizer, Vegetative growth.

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[DOR: 20.1001.1.20089082.1395.7.2.11.9]
[DOI: 10.18869/acadpub.ejgcst.7.2.125]