

Effect of arbuscular mycorrhiza fungi and organic fertilizers on yield and nutrients uptake of two wheat cultivars

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(Received: 10 June 2013 ; Accepted: 3 June 2015)

Abstract

This research was conducted in order to evaluate the direct effects of organic and biofertilizers on yield of two native wheat cultivars (Bolani and cross-Bolani) in Sistan area. The experiment was performed as a factorial, based on a completely randomized design with three replications, in Research Greenhouse of University of Zabol. In this study, fertilizer factor at 8 levels [Vermicompost (F1), vermicompost + compost (F2), vermicompost + mycorrhiza (F3), vermicompost + mycorrhiza + compost (F4), compost (F5), compost + mycorrhiza (F6), mycorrhiza (F7) and control (no fertilizer application, F8)] and two wheat cultivars [Bolani (C1) and cross-Bolani (C2)] were considered. Results showed that the highest grain yield (1.13 g/pot) was obtained from combination of mycorrhiza and cross-Bolani treatments (F7C2). Combined treatments of compost + mycorrhiza and cross-Bolani (F6C2) and vermicompost + compost and cross-Bolani (F2C2) were more suitable for nitrogen uptake. The highest percentage of protein (10.27%) was resulted from F6C2 and F2C2 treatment. Overall, combined treatments of F6C2 and F2C2 seem appropriate for Bolani and cross-Bolani wheat cultivars.

Keywords: Wheat, Organic fertilizer, Vermicompost, Mycorrhiza, Compost.

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