

Abstract

The use of organic fertilizers and bio-fertilizers to reduce consumption and improve soil condition is regarded as one of the new approaches in sustainable agriculture. And the strategic importance of wheat and its role in the global supply of food sources is important to pay special attention to this product. This investigation was conducted in order to evaluate the direct effects of organic and bio - fertilizers on yield components of two native wheat cultivars, Bolani and cross - Bolani. The experiment conducted as a factorial in a completely randomized design with three and four replications was conducted in greenhouse of Zabol University. The first planting fertilizers factors include: vermicompost (F1), compost, vermicompost + (F2), vermicompost + mycorrhiza (F3), compost + vermicompost + mycorrhiza (F4), compost (F5), compost + mycorrhiza (F6), mycorrhiza (F7) and control (no application F8) and two wheat cultivars Bolani (C1) and cross-Bolani (C2) were considered. The results showed that the interaction effect of combined treatments (F7C2) of high yield (1.13 g.pot-1) obtained. Overall, the combined application of vermicompost and mycorrhiza cultivar Bolani Cross seems more suitable for grain production. The study also found the rate of nutrient absorption the percent nitrogen uptake by wheat treatment combination (F6C2) and (F2C2) are more appropriate. The highest percentage of protein (10.27%) of compound (F6C2) and (F2C2), respectively. In the second test fertilizer factors include: vermicompost (F1), mycorrhiza (F2) and control no fertilizer (F3) was used along with cultivars of wheat falat. The results show that Maximum yeild of application control treatment (F3).Fusarium head blight one of the Most destructive diseases of wheat around the world, The importance of this disease and yield loss in wheat production and accumulation of mycotoxins in grains harvested from contaminated clusters and these compounds are dangerous to humans and animals. Therefor finding a method to gain control is increasing plant resistance. Extraction of total RNA and CDNA manufacturing companies based Protocol Sina gene was Vivantice. Data of Pfaffl method showed The highest expression of mycorrhiza and control fertility treatment reduced the gene expression than two treatments was observed. The results show that the symbiotic relationship with mycorrhizal fungi in soil and plant increase resistance expression gene than control treatment.

Key words: Organic fertilizer, Vermicompost, Mycorrhiza, wheat, *Fusarium graminearum*



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