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Effect of chemical, organic and biological fertilizers systems on yield and yield components of wheat genotypes (*T. aestivum and T. durum*) in Ahvaz conditions

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Abstract

In order to study the effect of fertilizer systems and cultivars on wheat production, an experiment was conducted in Agriculture and Natural Resources University of Ramin, North of Ahvaz, Iran, in 2008- 2009 growing season. Treatments were arranged as a split-plot experiment in a randomized complete block design with three replications. Fertilizer treatments in four (low input chemical system, high input chemical system, chicken manure and chicken manure + biofetilizers) and six cultivars (Veenak, Chamran, Star, D-79-15, Karkheh and SP-50) were in main plots and sub plots respectively. The results indicated that in integrated system, grain yield (7042/5 kg/ha) significantly increased and this system showed no significance difference from high input chemical system (6530.9 kg/h). Also, the biological yield, harvest index, spiks/m^2, 1000-grain weight and chlorophyll content increased with the application of organic manure and biofertilizers. However, the greatest of kernels per spike and grain protein content (12/63 %) were observed by the application of high input chemical system. The highest grain yield, biological yield, harvest index kernel number per spike and chlorophyll content were found at all fertility systems, in late maturing bread (star) and durum (SP50) wheat cultivars. Generally, by application of animal manure and biofertilizers wheat yield and its components increased, as well as from application of inorganic nutrients. In addition, less use of chemical methods led to environmental conservation. Thus, integrated use of animal manure and biofertilizers has been suggested to exploit the suitable yield of wheat besides improving environment.

Keywords: Fertilizers systems, Genotypes, Yield and yield components, Wheat