The Study of Relationship Between Seed Yield and its Components in *Agropyron Desertorum* Genotypes.

A.R. Seyedmohammadi[1]*, A.A. Jafari[2] , N. Abdi[3], and N. Seyedmohammadi[4]

1. **Corresponding Author:** Plant Breeding Postgraduate Student and Young Researchers Club Member of Islamic Azad University, Ahvaz Branch, Iran (seyedmohammadi.ali@gmail.com)
2. Associate Professor of Research Institute of Forests and Rangelands, Tehran, Iran
3. Assistant Professor of Islamic Azad University, Arak Branch, Iran.
4. Farmer Postgraduate Student of Tehran University, Iran.

Received: October 28, 2008 Accepted: November 10, 2010

Abstract

In order to study variations and explanain the relationships between seed yield and its components, 31 genotypes of standard crested wheatgrass *(Agropyron desertorum* Fish.ex Link) were evaluated in 2 separeted experiments including dry farming and rainfed conditions in the condensed form in plots (dimention of 1×2 m) in a Randomized Compeletely Blick Design (RCBD) with 3 replications, during 2004-2005 in Arak city, and traits such as the date of spike appearance, the date of pollination, plant height, spike length, spikelet number per spike, the size of flag leaf, the length of peduncle, thousand grain weight, tiller number per plant, seed weight per spike, seed number per spike, harvest index, seed yield and forage yield were measured. Phenotypic correlation analyses indicated that seed yield has a possitive and significant correlation, with traits such as tiller number (r=0.77), spiklet number per spike (r=0.31) and harvest index (r=0.67). Stepwise regression analysis was utilized for the study of relationships between seed yield and its components. The results obtained from stepwise regression analysis for seed yield as a dependent variable, indicated significant effects of tiller number, harvest index, forage yield and spike length on seed yield with R^2=0.90. According to Path analysis, harvest index and forage yield had the most direct effect and also fertile tiller number had the most indirect effect (through an increase in harvest index) on seed yield.

Keywords: *Agropyron Desertorum, Seed Yield, Yield Components, Correlation Analysis, Stepwise Regression*