

Turkish Journal of Agriculture and Forestry

Turkish Journal

of

The relationships of some traits in Turkish winter bread wheat landraces

Agriculture and Forestry

Mevlüt AKÇURA

Department of Field Crops, Faculty of Agriculture, Bingöl University, P.O. Box: 42, Bingöl - TURKEY

 [Find Manuscript](#)



agric@tubitak.gov.tr

[Scientific Journals Home Page](#)

Abstract: In this study, 42 bread wheat pure lines obtained from 340 landraces, collected from 35 provinces of 7 regions in Turkey, and 7 modern bread wheat cultivars were evaluated under rainfed conditions in Konya, in 2005-2006 and 2006-2007 growing seasons. Experiments were conducted in a 7×7 lattice design in 3 replicates. Both genotype-traits (GT) biplot analysis and path analysis were used to investigate the relationships between grain yield and 12 traits. Applying both types of analyses to the multiple traits data revealed that GT biplot graphically displayed the interrelationships among traits (breeding objectives), identified traits that are positively or negatively associated, and facilitated visual comparison trait profiles (strength and weakness) of genotypes, which is important for parent as well as variety selection. Vast variations existed in traits (number of grains m^{-2} , harvest index, number of spikes m^{-2} , number of grains spike $^{-1}$, and weight of grains spike $^{-1}$ and biological yield) and grain yield. It was found that either pure lines or cultivars with the highest grain yield had the highest biological yield, number of grain m^{-2} , and harvest index. The results showed that pure lines combined with favorable traits G43 (Kars-TR15796-7), G33 (Kars-TR15796-4), G20 (Kütahya-TR55167-3), and G11 (Kütahya-TR55212-4) can be evaluated in multi-environment trials for a candidate winter bread wheat registration trial. Some pure lines that had high quality traits G26 (Samsun-TR37926-3), G45 (Erzurum-TR32881-6) and G49 (Erzurum-TR32668-1) might be good parents for enhancing quality in bread wheat. In conclusion, for the short-term improvement of Turkish bread wheat landraces may be possible through an indirect selection of the number of grain m^{-2} and biological yield, or direct selection for grain yield per se. In the long-run, crossing programs between indigenous and introduced exotic germplasm may be necessary for high industrial quality characters of bread wheat.

Key words: Biplot analysis, grain yield, multiple traits, path analysis, Turkey, winter bread wheat landraces

Turk. J. Agric. For., **35**, (2011), 115-125.

Full text: [pdf](#)

Other articles published in the same issue: [Turk. J. Agric. For.,vol.35,iss.2.](#)