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Study genetic diversity of 40 bread wheat (*Triticum aestivum* L.) genotypes using SSR markers

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Progress in breeding programs depends on genetic diversity. In the present study, genetic diversity of 40 Iranian and overseas bread wheat genotypes were evaluated using SSR markers. Also, phenotyping diversity of important agronomic traits including grain yield, 1000-grain yield, tiller number, days to flowering, days to ripening, grain filling period, leaf area, chlorophyll a and chlorophyll b were assessed in Shahid Bahonar University of Kerman field in a randomized complete block design with three replications during 2011 to 2012. Evaluated genotypes showed considerable genetic diversity for all traits. This diversity enables wheat breeders to get high genetic gain in breeding programs for these traits. In this study, 31 polymorphic bands were detected. The average expected heterozygosity was 0.36 for all loci. Wmc 420 SSR marker showed the highest diversity in evaluated population. Cluster analysis was performed based on Ward's method. Results of this research showed high phenotypic and genotypic diversity of 40 Iranian and overseas bread wheat. Cluster analysis based on SSR markers and morphological traits divided genotypes into five groups. Based on agronomic traits, Roushan was the best cultivar in Kerman condition. This cultivar is proposed as one of the parent in wheat breeding programs for harsh condition (mean severe drought stress condition) such as Kerman.

Biography

Roohollah Abdolshahi has completed his PhD from Tehran University. He is a Science Member of Shahi Bahonar University. He has published more than 10 papers in reputed journals and has been working as a wheat breeder for drought stress condition.

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