

Identification and Classification of Gliadin Genes in Iranian Diploid Wheat

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Abstract : Wheat is the first and the most important grain of the world and its bakery property is due to glutenin and gliadin qualities. Wheat seed proteins were divided into four groups according to solubility. Two groups are albumin and globulin dissolving in water and salt solutions possessing metabolic activities. Two other groups are inactive and non-dissolvable and contain glutelins or glutenins and prolamins or gliadins. Gliadins are major components of the storage proteins in wheat endosperm. Gliadin proteins are separated into three groups based on electrophoretic mobility: α/β -gliadin, γ -gliadin, and ω -gliadin. It seems that little information is available about gliadin genes in Iranian wild relatives of wheat. Thus, the aim of this study was the evaluation of the wheat wild relatives collected from different origins of Zagros Mountains in Iran, involving coding gliadin genes using specific primers. For this, forty accessions of *Triticum boeoticum* and *Triticum urartu* were selected. For each accession, genomic DNA was extracted and PCRs were performed in total volumes of 15 μ l. The amplification products were separated on 1.5% agarose gels. In results, for Gli-2A locus, three allelic variants were detected by Gli-2As primer pairs. The sizes of PCR products for these alleles were 210, 490 and 700 bp. Only five (13%) and two accessions (5%) produced 700 and 490 bp fragments when their DNA was amplified with the Gli.As.2 primer pairs. However, 37 of the 40 accessions (93%) carried 210 bp allele, and three accessions (8%) did not yield any product for this marker. Therefore, these germplasm could be used as rich gene pool to broaden the genetic base of bread wheat.

Keywords : diploied wheat, gliadin, *Triticum boeoticum*, *Triticum urartu*

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