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A SUSTAINABLE DURUM WHEAT CHAIN  
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### DIVERSITY AND CORRELATION ANALYSIS IN DURUM WHEAT (*TRITICUM AESTIVUM* L) GERMPLASM

Muhammad Ashfaq<sup>a\*</sup>, Muhammad Saleem Haider<sup>a</sup>, Muhammad Ali<sup>a</sup>, Muhammad Sajjad<sup>c</sup>,  
Amna Ali<sup>a</sup> and Urooj Mubashar<sup>b</sup>

<sup>a</sup>*Institute of Agricultural Sciences, University of the Punjab, Lahore, .*

<sup>b</sup>*Government Elementary Teachers Education College, Ghakkhar Mandi, Gujranwala, Pakistan.*

<sup>c</sup>*Comsat Institute Vehari, Pakistan/ Chinese Academy of Sciences, China.*

Genetic diversity was confirmed by measuring different morphological traits i.e. seed traits and other genomic traits. In present study, genetic diversity based on DNA markers and seed morphological traits was assessed in a set of 20 wheat accessions. Variance and association study of desirable traits determine the genotypic differences among the wheat germplasm. Seed thickness has positive correlation with seed length and seed length width ratio ( $r=0.166^{**}$ ,  $r=0.340^{**}$ ). On the other hand, seed thickness also showed positive significant association with seed width and 1000-grain weight ( $0.274^{**}$ ,  $0.180^{**}$ , respectively). After screening genetic diversity of potential wheat lines were studied to check the polymorphism by using 15 SSR markers. DNA was extracted and PCR analyses were done to study PIC values and allelic diversity of the genotypes. Minimum (0.404) and maximum (0.833) PIC values were observed from primers 'WMC15' and 'WMC24', respectively. For molecular diversity analysis data from 15 polymorphic SSR primer pairs were used to determine total number of alleles (4.53), polymorphic alleles (4.40), polymorphism% (96.5) and polymorphic information content (0.636). The main objective of this study is to screen out the genotypes on the basis of various genotypic and phenotypic traits for further use in breeding research programme for improving wheat yield.

**Keywords:** Wheat, Morphological Traits, Germplasm, Association, Genetic Diversity