

CORRELATION AND PHENOTYPIC VARIABILITY STUDIES FOR SOME AGRONOMIC TRAITS AMONG BREAD WHEAT (*Triticum aestivum* L.) ACCESSIONS.

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ABSTRACT

To evaluate frequency distribution and correlation coefficient of wheat (*Triticum aestivum* L.) accessions, an experimental plot of one hundred wheat accessions were evaluated and characterized for spike length (cm), number of spikelets spike⁻¹, grain yield plant⁻¹, 1000-grain weight and grain yield (kg ha⁻¹) parameters during the rabi season 2004-2005. Genetic diversity was found satisfactory for all the traits. The frequency distribution shows that spike length ranged from 6.2 to 22.1 (cm). Variability was observed among the accessions for spike length (cm), which varied from 6.50 to 21.90 (cm) with mean value of 12.23 ± 2.28 (cm) and coefficient of variation for this parameter was 18.63 %. The results of formal analysis revealed that distant variability in spikelets spike⁻¹ was detected which ranged from 8.50 to 29.80 numbers of spikelets spike⁻¹ with the mean value of 16.35 ± 3.00 and coefficient of variation is 8.32%. The frequency distribution for number of spikelets spike⁻¹ showed the variability from 7.1 to 31.00. The variation for grain yield plant⁻¹ ranged from 1.26 to 4.58 (g) with mean value of 2.36±0.52 and coefficient of variation 21.89 %. Frequency distribution for grain yield plant⁻¹ ranged from 1.26 to 3.32 (g). 1000-grain weight (g) varied between 15.74 to 46.65 (g) with the mean value of 34.20±8.05 and coefficient of variation for this parameter was 23.55%. The frequency distribution for 1000-grain weight (g) ranged from 15.20 to 47.19 (g). The variation for grain yield (kg ha⁻¹) ranged from 2610 to 5058 (kg ha⁻¹) with mean value of 4165 ± 504.45 (kg ha⁻¹) and coefficient of variation for this character was 12.11%. Frequency distribution for grain yield (kg ha⁻¹) ranged from 2610 to 5065.9 (kg ha⁻¹). Spike length revealed significant and highly positively correlation with number of spikelets spike⁻¹ (r = 0.20), grain yields plant⁻¹ (r = 0.16) and grain yield (kg ha⁻¹) (r = 0.18), while this trait has negative correlation with 1000-grain weight (r = -0.02). Highly significant and positive correlation was reviewed in number of spikelets spike⁻¹ with grain yield plant⁻¹ (r = 0.49) and grain yield (kg ha⁻¹) (r = 0.34). While positive correlation of this trait was noted with 1000-grain weight (r = 0.02). Grain yield plant⁻¹ had highly significant positive correlation with 1000-grain weight (r = 0.30) and grain yield (kg ha⁻¹) (r = 0.62). Highly significant positive correlation was observed of 1000-grain weight with grain yield (kg ha⁻¹) (r = 0.44).

INTRODUCTION

Wheat is the staple food for 35 % of the world's population and is grown on 17 % of the cultivated area in the world (Kronstad, 1998). In Pakistan it is called Kanak (Punjabi), Ghanum (Pashto), and Gandum (Urdu). Wheat belongs to the triticeae tribe (Dumort; Hordeae, Benth.) and subtribe Triticinae of the grass family Poaceae (Gramineae), one of the largest families of Angiosperm (flowering plants) including 600-700 genera and approximately 10,000 species. According to (Levy and Feldman, 2002), all major types of polyploids (autopolyploids, allopolyploids and segmental polyploids) are the members of this family. Being of great importance nutritionally to many people of the world,

wheat grain protein plays a fundamental part in food processing, for instance, in bread making, biscuits, breakfast cereals, and pasta products (Payne and Rhodes, 1982). On the basis of the geographical distribution of genetic diversity in different crop species he identified areas, as centres of genetic diversity. This may result in the loss of valuable indigenous accession if it is not incorporated in accession collection and conserved for future generation. Vavilov (1926) a geneticist and plant geographer, explored the agricultural flora in many of the less developed and largely mountainous parts of the world, where the indigenous crop varieties had not yet given way to cultivars selected by plant breeders. Keeping in view the importance of germplasm,