

EVALUATION OF SOME WHEAT (*Triticum aestivum* L.) GERMPLASMS FOR ITS VARIABILITY FOR DIFFERENT TRAITS.

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ABSTRACT

To study the genetic variability of one hundred wheat (*Triticum aestivum* L.) entries, an experiment was conducted during the growing season 2004-2005 in augmented field design at research area of the Department of Plant Breeding and Genetics, Faculty of Agriculture, Gomal University, Dera Ismail Khan (NWFP). All the germplasm was evaluated and characterized for the traits days to emergence, days to heading, days to maturity, number of tillers plant⁻¹ and Plant height (cm). Variation was statistically found for all the parameters. Days to emergence varied from 7.10 to 20.10 days having 24.03% coefficient of variation. Days to heading ranged from 79.15 [PARC/NIAR 00203 (05)] to 130.25 [PARC/MAFF 004271 (01)] days with coefficient of variation 9.35 %. Minimum days to maturity (136) were taken by the entry PARC/NIAR 00203 (05) while the maximum days to maturity (193) were taken by PARC/MAFF 004271 (01). The entry PARC/NIAR 002809 (01) produced maximum number of tillers plant⁻¹. PARC/NIAR 00203 (05) has a maximum plant height (125.6 cm), while the entry PARC/MAFF 004270 (03) had the shortest plant height of (53.2 cm). Days to emergence have positively significant correlation with number of tillers plant⁻¹ while, negatively significant correlation with days to maturity. Days to heading have a significant and positive correlation with days to maturity. Days to maturity have negative correlation with plant height and number of tillers plant⁻¹. Plant height has a significant correlation with number of tillers plant⁻¹.

INTRODUCTION

Wheat is the most important food crop of the world. The largest cropped area is devoted to wheat, and the quantity produced is more than that of any other crop. In 1991-92, the leading wheat-producing countries were China, the former USSR, India, the United States, France, and Canada (Agriculture Statistics of Pakistan, 1991-92). Wheat is the leading cereal grain crop in terms of production, consumption, nutritive value, storage qualities, adaptation and trade, and has been intimately linked with the development of both agriculture and civilization over a long period of time. Because of its wide usage in the form of human food (65%), feed for livestock (21%), seed (8%) and industrial and other products (6%), wheat has played a significant role in establishing permanent settlements, fostering the development of human civilization through cultural/religious development, and in continuous population growth all over the world. This cereal is expected to play a greater role in future in those regions of the world where there is an

increasing preference for wheat products (especially developing countries). Furthermore, humans are becoming increasingly health conscious and shifting their non-vegetarian food habits to vegetarian diets. It is but natural, that the domestication of wheat should have taken place in the Fertile Crescent, since this is the center of its wild progenitor's geographical distribution (Harlan and Zohary, 1966; Zohary, 1970). Naturally distributed biological species were adapted to their changing environments through the conservation of high genetic variability in their natural populations, and this resulting variability is the promoting force behind the evolution of the species and speciation. Its great popularity as human food is due to its mild, acceptable flavor and to the unique ability of its principal proteins to form gluten when mixed with water. Due to rapid growth of population increased production must come not only from land already available but also from new lands brought under cultivation and by increasing cropping intensity. Hence, plant breeders took a