CHAPTER-IV

EXPERIMENTAL RESULTS

The experimental results presented in this chapter comprised of following different aspects in durum wheat (*Triticum durum*). These aspects are:

4.1 Analysis of variance
4.2 Genetic variability parameters
4.3 Correlation coefficients
4.4 Path coefficient analysis

**4.1 ANALYSIS OF VARIANCE**

The analysis of variance for all the twelve characters studied is presented in Table 4.1. The analysis of variance revealed that mean square due to genotypes was highly significant for all the 12 characters indicating the presence of sufficient amount of variability in the experimental material used.

**4.2 GENETIC VARIABILITY PARAMETERS**

The results obtained on various parameters of genetic variability are presented as under:

**4.2.1 Mean performance and range of variation**

The mean values of 40 genotypes of durum wheat for all the 12 characters along with standard error of mean (S.Em), critical difference (C.D.) and coefficient of variation (C.V.) is given in Appendix-II. The summary is also presented in Table 4.2.

The genotype HI-8498 had the highest grain yield per plant (9.45 g) which was statistically at par with PDW-350 (8.59 g). The genotype HI-8498 gave highest biological yield per plant (17.54 g) followed by MACS-3744 (16.55 g), UAS-428 (16.39 g), PDW-350 (16.36 g) and GDW-1255 (16.29 g). MACS-4054 was the earliest in days to 50% flowering (56 days). Minimum grain filling period was recorded in genotype PDW-350 (27.33 days) followed by DDW-40 (28.00 days), IWP-5070 (28.33 days) and PDW-233 (28.33 days). The genotype GW-2014-565, HI-4728 and HI-8498 recorded minimum number of days to maturity (92.33 days) followed by GW-2015-689 (92.67 days), GW-1330 (93.00 days), AKDW-4905, GDW-1255, MACS-4054 and MPO-1329 (93.33 days), HD-4728, MACS-3744,

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NIDW-1055, WHD-948 and WSM-5723 (93.67 days). The dwarf plant height is desirable in wheat and minimum plant height was recorded by genotype GW-2015-689 (61.49 cm) followed by GDW-1255 (63.55 cm). Maximum number of productive tillers per plant was observed in genotype HI-8498 (4.20) followed by NIDW-653, GDW-1255 and PDW-350 (4.07) and RKD-296 (4.00). The highest ear length was observed in genotype HI-8724 (9.28 cm).

Highest number of grains per main spike was recorded in genotype WHD-933 (59.13) followed by RAJ-155 (58.27), MACS-4054 (52.07), IWP-5070 (50.80), PDW-350 (50.73) and UPD-2949 (50.27). Similarly, the maximum grain weight per main spike was recorded in genotype MACS-4054 (2.55 g) followed by RAJ-1555 (2.53 g), WHD-948 (2.32 g), GW-1139 (2.29 g), GW-2014-565 (2.27 g), HI-8498 (2.26 g), HI-4728 (2.24 g), MACS-4049 (2.21 g), MPO-1215 (2.15 g), WHD-933 (2.13 g), MACS-3744, MPO-1329 and UAS-460 (2.09 g) and NIDW-1055 (2.08 g), while maximum 100-grain weight was observed in genotype GW-1330 (5.17 g). Harvest index is very important trait and maximum harvest index was recorded in genotype RAJ-1555 (54.01%).

Grain weight per main spike recorded maximum phenotypic range of variation (1.05-2.55 g) with coefficient of range 41.56% followed by grain yield per plant (4.01-9.45 g) and number of grains per main spike (29.53-59.13) with 40.46% and 33.38% range of variation, respectively. The moderate phenotypic range of variation was observed for 100-grain weight (2.87-5.17), number of productive tillers per plant (2.60-4.20), ear length (5.96-9.28 cm), biological yield per plant (11.37-17.54 g), harvest index (35.40-54.01 %) and plant height (61.49-92.57 cm) with 28.55%, 23.53%, 21.78%, 21.33%, 20.81% and 20.17% range of variation, respectively. There was narrow range of variation (below 15 %) for days to 50% flowering (56.00-71.67 days), grain filling period (27.33-34.33 days) and days to maturity (92.33-101.00 days) with 12.27%, 11.35% and 4.48% range of variation, respectively.

4.2.2 Phenotypic coefficient of variation

Phenotypic coefficients of variation (PCV) for all the characters are given in Table 4.2. The high phenotypic coefficient of variation was observed for grain weight per main spike (21.00%). Moderate PCV was recorded in grain yield per plant (19.18%), number of grains per main spike (18.57%), 100-grain weight (15.51%), number of productive tillers per plant (13.61%), biological yield per plant (12.95%) and harvest index (11.59%), while low PCV was recorded in ear length (8.95%), plant...