

COMBINING ABILITY ESTIMATION FOR MORPHOLOGICAL AND YIELD CONTRIBUTING CHARACTERS IN *DESI* COTTON (*GOSSYPIUM ARBOREUM*)

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Abstract: In the present study six arboreum lines (PA-720, PA-08, PA-528, PA-532, PA-255 and PA-402) were crossed with four testers (AKA-7, GAM-162, Dwd-arb-10-1 and JLA-802) to obtain twenty four hybrids following line × tester design. The resultant twenty four hybrids along with their parents were evaluated in a randomized block design with three replications at Cotton Research Station, Mahboob Bagh Farm, Vasantrya Naik Marathwada Krishi Vidyapeeth, Parbhani during *khari*f 2012-13. Observations were recorded on twelve parameters *viz.*, days to 50% flowering, days to 50% boll bursting, no. of sympodia per plant, no. of bolls per plant, no. of seeds per boll, boll weight, plant height, days to maturity, seed cotton yield per plant, lint yield per plant, seed index and oil content. The combining ability analysis indicated the presence of considerable variability in crosses for most of the traits under study. The lines *viz.*, PA-720, PA-08 and PA-532 and the tester AKA-7 was found the best general combiner. The crosses *viz.*, PA-528 × AKA-7, PA-528 × JLA-802 and PA-08 × AKA-7 showed significance of SCA effects for more number of traits so these can be used for future breeding programmes. The variance estimates due to GCA and SCA were highly significant for most of the characters. The magnitude of SCA variance was greater than GCA variance and more contribution of line × tester interaction to the total variability indicated the predominance of non additive gene action, so for improvement of these traits heterosis breeding is considered the more rewarding option.

Keywords: *Gossypium arboreum*, Seed, Cotton

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