

Potential Parents for Yield and Yield Related Components in *Kharif* Sorghum

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Abstract—Hybrid vigour and its commercial exploitation in Kharif sorghum is an important practice in increasing sorghum production. The estimates of combining ability are useful to predict the relative performance of different lines in hybrid combinations. The information on the nature and magnitude of gene action is important in understanding the genetic potential of a population. It is useful to decide the breeding procedure. Line x tester analysis is a precise method for obtaining such information when a large number of parents to be tested. In the development of the high yielding hybrids, the identification of the potential parental lines is of prime importance. General combining analysis is the best tool to assess the potential of any parent. Keeping this in view Six lines and eleven testers were crossed in line x tester fashion and the resultant 66 hybrids were evaluated along with the check for grain yield and its components for combining ability analysis. The general combining ability study revealed that among the lines, the line AKMS 89 A and another line AKMS 103-8-1A were the best general combiners for the grain yield along with some of the yield components. Among the testers, the tester AKR 525, AKR 530, AKR 524, AKR 528 and AKR 529 were found to be the best for grain yield per plant. These two lines and five testers need to be extensively used in crossing programme for development of high yielding kharif sorghum hybrids.

Keywords: Sorghum, gca, combining ability analysis, Line x Tester.