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Genetic variability, heritability and genetic advance for agronomical traits of Ethiopian sorghum [*Sorghum Bicolor* (L.) Moench] genotypes

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Ethiopia is the center of sorghum with a wide range of sorghum collections for various agro-ecologies. However, there are many factors that hinder the production and productivity of sorghum. Thus, the present study was to assess genetic variability of early and medium maturing lowland adapted landrace and improved sorghum genotypes to evaluate the performance of sorghum genotypes and identify promising lines for the dry lowland environments of Ethiopia. Alpha lattice design involving 110 early and medium maturing sorghum genotypes were used in replicated twice at Meiso and Sheraro in 2016 cropping season. Results from combined analysis of variance over the two locations revealed that mean squares due to genotypes for almost all traits were highly significant ($P \leq 0.01$) i.e. for days to flowering, days to maturity, grain yield, panicle weight, hundred grain weight, panicle length, plant height and disease score in both locations. The significant mean squares due to genotypes indicated the existence of variation among the genotypes, which could be exploited for the improvement of respective traits. Heritability for nine morpho-agronomic traits calculated ranged from 0.03 for grain yield to 0.93 for plant height at Meiso and from 0.02 for plant height to 0.19 for a number of panicles per plot at Sheraro. The information generated in the present study will be useful for breeders who want to improve yield and yield-contributing traits of sorghum.

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