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[\[PDF \(156K\)\]](#) [\[References\]](#)**Sorghum Diversity Evaluated by Simple Sequence Repeat (SSR) Markers and Phenotypic Performance**[Anas](#)¹⁾ and [Tomohiko Yoshida](#)²⁾

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Abstract: Analysis of phenotypic performance in the field in combination with molecular analysis provides useful information to increase the efficiency in plant breeding programs. We investigated: (i) the relationship between phenotypic performance and genetic diversity determined using simple sequence repeat (SSR) markers, (ii) the possibility of grouping inbred lines based on phenotypic performances and (iii) the genotypic and phenotypic variance of yield, yield components and primary agronomic traits among inbred lines. Among 22 sorghum inbred lines, grain yield per plot and days to flowering were less representative as phenotypic markers. However, the following six phenotypic traits showed high heritability; 1000-grain weight, ear length, plant height, stalk diameter, dry weight and harvest index, and were useful as phenotypic markers. The data obtained using SSR markers significantly correlated with those of phenotypic performance in this study, and the grouping of inbred lines based on the combination of the performance of six phenotypes was similar to that based on SSR markers. On the basis of phenotypic performance, four inbred lines, D12, H11, C9xH13 and C9xH11, were selected as promising parents for plant breeding programs.

Keywords: [Correlation](#), [Phenotype](#), [Sorghum](#), [SSR](#)

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