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Gene effects for grain iron and zinc in sorghum (*sorghum bicolor* L. Moench)

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Sorghum bicolor L. Moench is a major food crop in African and Asian countries. Eradication of hidden hunger through fortification of food consumed is an easy way. Iron and Zinc deficiencies are widespread across the world. Thus the present investigation was carried out in sorghum to determine the gene action involved in the inheritance of grain iron and zinc concentrations and other related traits using generation mean analysis. Two crosses viz., ICSB 52 × IS 13211, ICSB 52 × SPV 1359, were made using diverse parents with varied levels of grain iron and zinc concentrations. Six generations viz., P₁, P₂, F₁, F₂, B₁ and B₂ were developed for the above crosses and were evaluated during post-rainy season, 2012-13 at ICRISAT, Patancheru. The results of generation mean analysis revealed the predominant role of additive gene action and additive × additive component of epistasis was found responsible in the crosses ICSB 52 × IS 13211 and ICSB 52 × SPV 1359 in governing grain iron and zinc concentrations and days to 50 % flowering. For remaining traits viz., plant height, panicle length, panicle width, grain yield plant⁻¹, 100- grain weight had dominance component and found responsible than additive. Among the interactions, dominance × dominance component was of higher value than the remaining in governing the traits under concern. For all the traits, the magnitude of interactions was of higher value than their respective direct effects.