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ABSTRACT

The lepidopteran *Chilo partellus* Crambid, an introduced pest in East and southern Africa from Asia, is the most economically important stem borer species infesting cereals in Africa. *Chilo partellus* causes more than 40% yield loss in sorghum in East Africa. Cultural strategies, biological control using parasitoids, as well as pesticides are being employed, but are either ineffective or uneconomic for resource constrained farmers in cereal production. Thus host resistance remains the most economic viable strategy. Sorghum is an African crop and has thus co-evolved with several pests, inherently developing resistance to them as well as *C. partellus*. Moreover, *C. partellus* is exotic with limited sources of resistance in local sorghum. Sorghum from other ecologies with a long history of *C. partellus* infestation could thus provide additional and new sources of resistance. The objective of this study was to evaluate a panel of local and exotic sorghum genotypes for resistance to *C. partellus*. Seven genotypes from East Africa and twenty from India were evaluated at Kiboko, Kenya, for tolerance/resistance to *C. partellus* during long- and short-rainy seasons of 2010. Test plants were artificially infested with five stem borer neonates, and data were recorded on leaf feeding, deadhearts, stem tunneling and exit holes as well as agronomic parameters. Based on selection index generated, genotypes ICSA 472, ICSA 473, ICSV 700 and ICSA 464 were resistant owing to antibiosis and antixenosis mechanisms of resistance. These genotypes can be used in sorghum improvement to develop cultivars with high grain yield and resistance to *C. partellus*.