

Abstract

Storage insect pests of maize cause weight and quality loss. Although insecticides and fumigants are available, use of resistant varieties is preferred due to low cost, have no adverse effect on environment and leave no toxic residues on food products. The objective of this study was to evaluate locally grown maize varieties for susceptibility to maize weevil (*Sitophilus zeamais* Motsch). Sixteen varieties were screened in the laboratory and field over two growing seasons. Grain samples from field experiments were incubated for two months and insect pests that emerged counted and identified to species level. Insect-free and undamaged samples of each variety were infested with unsexed four-week old weevils and incubated for three months and the percentage grain damage, seed weight loss and number of F1 progeny determined. Varieties DK 8031 and H513 had significantly high ($P \leq 0.05$) infestation of up to 32 insects per 100 grams while Katumani had no insect infestation. Inbred line CKPH080020 had significantly low index of susceptibility, longer median development time, and number of F1 progeny. It was observed that an increase in the F1 progeny resulted in increased seed damage and seed weight loss. The study showed that there exists resistance among the maize varieties tested. The resistance in some of the varieties tested could be useful in improving local popular maize varieties through breeding. The resistant varieties identified could be further evaluated for possible promotion to farmers in insect damage prone areas.