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Relative Susceptibility of Different Varieties of Maize to *Spodoptera frugiperda*

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Abstract

Spodoptera frugiperda (Lepidoptera: Noctuidae), commonly known as fall armyworm is an insect pest that originates from the tropical and subtropical regions of the Americas. It is a polyphagous pest that attack several crop plants including crops belonging to the family Poaceae in its native range. However, it has become a new invasive insect pest in West and Central Africa since 2016, attacking mainly maize crops and thereby threatening food security in the region. In Ghana, *S. frugiperda* was first sighted in the Yilo-Krobo district in the Eastern Region. Maize is an important staple crop in Ghana on which majority of the population depend as food. Therefore, this study was conducted to investigate the relative susceptibility of common maize varieties grown in Ghana most of which are local varieties except for *Zea mays* var. Panar. The maize varieties studied were *Zea mays* var. Panar (white), *Zea mays* var. Panar (yellow), *Zea mays* var. Obatanpa (white), *Zea mays* var. Obatanpa (yellow), *Zea mays* var. Omankwa (white) and *Zea mays* var. Abontem (yellow). Larvae of *S. frugiperda* were offered potted plants of the maize varieties as food in no-choice tests and the amount of the foliage consumed was estimated in percentage. In choice tests, gravid females were offered all six varieties in an enclosure as oviposition substrate. After 24 h, the variety on which gravid females oviposited were noted and recorded. In no choice tests, larvae of *S. frugiperda* fed on *Zea mays* var. Panar (white) more than the other varieties. Moreover, in choice tests, all gravid females laid their eggs on white maize varieties and among the white maize varieties, the gravid females laid eggs more frequently on *Zea mays* var. Panar (white) than the other varieties. Therefore, findings of this study suggest that, white maize varieties may be more susceptible to *S. frugiperda* attack than yellow maize varieties. Also, local varieties may be better than introduced varieties.

Keywords: Fall armyworm, Gramineae, Maize, Poaceae