

Yield response of okra, *Abelmoschus esculentus* (L.) Moench to leaf damage by the flea beetle, *Podagrica uniforma* Jacoby (Coleoptera: Chrysomelidae)

O. O. R. Pitan, E. E. Ekoja

Abstract

Yield-related response of okra plants, *Abelmoschus esculentus* (L.) Moench, to artificial infestation of the flea beetle (*Podagrica uniforma* Jac.) at different densities (0, 5, 10, 20, 30, and 40 pairs per cage) was studied in screen house and field experiments. In both experiments, increase in beetle density resulted in a significant reduction ($P < 0.05$) in fruit production, fruit length, fruit width, fresh fruit weight, number of seeds per fruit, 100 seed weight and fresh fruit yield. In addition, higher densities caused more dry matter accumulation in the seeds than in the husk of okra fruits. Compensation was noticed at the 5- and 10-pair levels of infestation in some of the variables measured. Fresh fruit yield reduction was more than 50% when beetle density was increased beyond 20 pairs per cage in both experiments. The lowest density of *P. uniforma* at which significant reduction ($P < 0.05$) occurred in fresh fruit yield per cage, when compared with the control, was the 20-pair level, representing the damage threshold of the beetle at which initiation of control measures would be justified. Regression analysis indicated that flea beetle density was linearly associated with fruit damage and fresh fruit yield. Also, chi-square analysis showed that the models derived from the screen house and field experiments were not significantly different ($P < 0.05$) from each other, and either could be used for prediction purposes.

Keywords: *Podagrica uniforma*; Okra; Infestation; Damage threshold; Yield