Tropentag, September 20-22, 2023, hybrid conference

"Competing pathways for equitable food systems transformation: Trade-offs and synergies"

Comparative effects of different cabbage varieties on the bionomics of two aphid species (hemiptera: Aphididae)

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Abstract

Lipaphis erysimi pseudobrassicae (Davis) and *Myzus persicae* (Sulzer) are important pests of brassica crops, causing significant yield losses on cabbage in Ghana. Management of these pests in the country is largely dependent on conventional insecticides, which often lead to pest resistance, environmental pollution, food safety, and health issues. To inform the development of ecologically sound and sustainable pest management strategies for these pests, their biological and population growth parameters were studied on three cabbage varieties (Oxylus, Fortune, and Leader cross). The study was conducted in a screen house under ambient conditions at 30 ± 1°C and 75 ± 5 % RH and 12:12 h photoperiod from September to November 2020. The parameters of the preadult developmental period, survival rates, longevity, reproduction, and life table were evaluated following the female age-specific life table. There were significant differences in the nymphal developmental time, longevity, and fecundity on the cabbage varieties for both aphid species. The highest population growth parameters, net reproductive rate (R0), intrinsic rate of increase (r), and finite rate of increase ( ) were recorded on Oxylus variety for both *L. e. pseudobrassicae* and *M. persicae*. The lowest was recorded on Leader cross variety for *L.e pseudobrassicae* and Fortune for *M. persicae*. The results from this study suggest that Leader cross is a less suitable host for *L. e. pseudobrassicae* and Fortune for *M. persicae*, thus, should be considered as less susceptible varieties for use in primary pest management by small-scale farmers or as a component of an integrated pest management strategy for these pests on cabbage.

Keywords: Aphids, bionomics, cabbage, pest management

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