

Abstract

Greenhouse experiments were conducted to study the effect of different host plants on population development of the sweetpotato whitefly, *Bemisia tabaci* Genn. Whiteflies reared on common bean plants completed development in 30.2 days, whereas those reared at the same temperature and relative humidity (22-23 deg C, 57-61% RH) on cucumber, eggplant, squash and tomato plants required 22.3-23.5 days. Female whiteflies lived for a longer time (1-29 days) on tomatoes and eggplants than on squash plants (2-23 days), beans (3-20 days) or cucumbers (2-19 days). Sex-ratio (female:male) in adult whiteflies was the highest for those reared on egg plants (1.63:1), followed in descending order by squash plants (1.55:1), beans (1.46:1), cucumbers (1.13:1) and tomatoes (1.07:1). Gravid female whiteflies laid the highest number of eggs on tomatoes (8.72 eggs/cm²), followed in descending order by squash (2.61), eggplant (0.94), bean (0.77) and cucumber plants (0.72). However, mortality in the immature stages was the lowest on eggplants (12.08%), followed in ascending order by tomatoes (16.27%), beans (23.44%), cucumbers (25.57%) and squash plants (27.35%). Thus, whitefly population density was highest on tomatoes (33.86 individuals/cm²), followed by squash plants (8.64). It was intermediate on eggplants (4.12) and beans (3.98) and lowest on cucumbers (2.52). In view of the afore mentioned results, population build-up of whiteflies was estimated for three generations on the different tested host plants. Accordingly, a cropping pattern for controlling whiteflies and reducing the incidence of virus diseases transmitted by them was suggested for the Jordan Valley