

Abstract

Sweet potato is an important food security crop in Kenya. The main sweet potato producing areas in Kenya include Nyanza (52 %), Western (35 %), Eastern (6 %), Rift valley (4 %), Central (2 %), and Coast (2%) provinces. Insect pests and diseases are among the major biotic constraints to sustainable sweet potato production. Whitefly (*Bemisia tabaci*) is a vector of sweet potato chlorotic stunt virus which jointly with the sweet potato feathery mottle virus cause sweet potato virus disease (SPVD), a devastating disease of sweet potato. Sweet potato plant resistance to whitefly would provide a cheap way to minimize viral infection in this crop. The objective of this study was to evaluate white fly populations in several sweet potato varieties. Twenty varieties comprising of improved and landraces were established at Kabete, Juja and Kibirigwi in Central Kenya. The trial was laid out in randomised complete blocks replicated thrice. They were counted on five top, middle and lower leaves on each plant early in the morning when the insects are less active. Adult whitefly populations were monitored on sweet potato leaves fortnightly. Variation of whitefly population in season, site and variety interactions was highly significant at $P < 0.001$. Whitefly populations varied appreciably within each site over time and also among seasons and sites. There was variety based variation in the whitefly population. Most of the varieties that had high and low white fly populations had broad and narrow leaves, respectively. Leaf size may be used as an indicator of resistance to SPVD in rapid variety screening trials.