Abstract

Effects of cucumber mosaic virus (CMV) on the yield and yield components of six cowpea genotypes (IT04K-217-5, IT07K-251-3-3, IT07K-299-4, IT07K-299-6, IT99K-1060 and Ife Brown) were evaluated in a screenhouse. The experiment was conducted as inoculated and uninoculated control using completely randomised design with five replications. Seedlings were inoculated with CMV at 10 days after sowing by sap transmission and maintained under screenhouse conditions. Disease incidence, disease severity, yield and yield components were recorded. Data were subjected to analysis of variance and significance determined at $p = 0.05$. All the CMV-inoculated plants exhibited typical leaf chlorosis and curling symptoms of CMV infection. Disease severity (4) and absorbance of virus concentration (2.9) were highest in the inoculated leaves of Ife Brown, whereas the cowpea genotype IT07K-299-6 exhibited the lowest disease severity (2.2) and virus titre (1.7). The lowest reductions in leaf number (6.2%), plant height (3%) and seed weight (2.6%) were found in IT07K-299-6. The cowpea genotype IT07K-299-6 is considered the most tolerant to CMV infection and its tolerance genes could be exploited for germplasm improvement in cowpea breeding programmes.

Keywords: breeding; cowpea yield; disease severity; tolerance