

Abstract

The interaction of Cassava mosaic geminivirus (CMG) and Cassava brown streak virus (CBSV) were tested in *Nicotiana benthamiana*. The inoculated virus and/or virus species were CMGs species (ACMV and EACMV-UgV), CBSV and dual CMGs and CBSV. The inoculum source was *N. benthamiana* plants pre-infected with viruses from diseased cassava cultivars collected from the western region of Kenya. Leaf samples from virus-infected *N. benthamiana* plants were ground in inoculation buffer [0.1M K-phosphate buffer, pH 7.0, containing 0.01% (w/v) β ME and Na₂SO₃]. The leaf homogenates were rubbed on 2-3 carborundum-dusted leaves of *Nicotiana benthamiana* plants at 3-5 leaf stage. Four treatments, CMGs (UgV+ACMV); CBSV; combination of CMGs+CBSV and non inoculated control plants were applied with 10 plants per each treatment inoculated in two trials. The plants were grown in a screen house and data recorded on severity of symptoms on leaves, days to symptom appearance and the percentage of infected plants. Highly significant $p < 0.05$ differences were observed on the severity of the disease but differences in days to first appearance of symptoms and the number of infected plants were not significant $p < 0.05$. The most severe symptoms of the disease and number of infected plants were observed in plants infected with both CMGs and CBSV (4.7 and 8) respectively. The earliest symptoms appeared in plants infected with CBSV (5 dpi) and dual infection took the longest period before symptoms were observed (9dpi). None of the plants in the control exhibited leaf symptoms. The dually infected plants exhibited more severe symptoms compared to single infections indicating synergistic interaction when the two viruses occur in combination.