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Cassava Leaf Harvesting as Vegetables — A Cause of Vulnerability of the Crop Plant to Cassava Mosaic Disease and Eventual Yield Reduction

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Abstract

The consequence of harvesting young leaves of cassava as vegetable on the vulnerability of the crop to cassava mosaic disease (CMD) and on storage root yield was investigated using 30 cassava genotypes planted in IITA fields located in the humid forest (Port Harcourt: Onne), forest-savannah transition (Ibadan), southern guinea savannah (Mokwa), northern guinea savannah (Zaria) and sudan savannah (Mallam-Madori) agroecologies in Nigeria. Tender apical leaves and shoots of the cassava genotypes were removed on forty plants with the same number of plants as control for each genotype. The treatment effect on vector whitefly infestation, disease incidence (DI) and symptom severity (ISS) of the disease was assessed monthly for six months and also at the ninth month after planting (MAP). Yield reduction due to this treatment was calculated as percentage harvest index (HI). Whitefly infestation was remarkably higher on plants subjected to this treatment than on control plants on all the genotypes. There was a significant treatment effect ($p < 0.01$) on DI and ISS on genotypes 96/0191, TMS 30572, 96/0035 and 4 (2)1425 in all the locations. Significant differences ($p < 0.01$) in DI and ISS were observed among cassava genotypes throughout the period of observation in all locations. There was positive correlation between DI and ISS on plants of genotypes 96/1039 and ISU. The percentage HI values on treated plants were remarkably lower than the values calculated for the control plants at all locations. Harvesting tender apical leaves and shoots of cassava as vegetables should be discouraged as it increases the severity of CMD infection in the regenerating shoots of cassava with attendant storage root yield reduction.

Keywords: Cassava genotypes, cassava mosaic disease (CMD), disease incidence, harvesting of cassava leaves, symptom severity, harvest index (HI)