

EVALUATION OF SWEETPOTATO VARIETIES FOR RESISTANCE TO SWEET POTATO VIRUS DISEASE AND ADAPTABILITY

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Abstract (C2062)

Sweetpotato virus disease (SPVD) is caused by dual infection of the aphid-borne sweetpotato feathery mottle virus (SPFMV) and the whitefly-borne sweetpotato chlorotic stunt virus (SPCSV) and it greatly reduces tuber yield. Farmers grow varieties that are susceptible to SPVD because they do not know whether resistant materials to the disease are available. A cheap way to control the disease would be to evaluate a diverse range of sweetpotato varieties and identify SPVD tolerant ones. The objectives of this study were to identify sources of resistance to SPVD and evaluate the materials for adaptability in these areas. Twenty sweet potato cultivars comprising of improved varieties and local landraces were established in the field at Kabete, Juja and Kibirigwi in Kenya during the long and short rain seasons in 2006. Seedlings were challenged with natural SPVD infection by planting two rows of sweet potato spreader plants in around each plot. The trial was laid out as a randomised complete block design replicated three times. Results showed that varieties differed significantly ($P < 0.01$) in response to SPVD. Zapallo, Jonathan and Japanese were tolerant while Jewel, Mugande and 440015 were susceptible to SPVD. Tolerant varieties were stable across environments in relation to SPVD thus could be cultivated by farmers in areas where SPVD prevalence is high. These results show that possibly variety Japanese, Jonathan and Zapallo possess good levels of tolerance, and could be used to improve the level of tolerance of the land races. Tolerant and moderately susceptible varieties were stable among environments in relation to disease incidence. There is need to investigate the inheritance of this resistance in sweet potato.

Key words: Sweet potato, plant resistant, SPFMV, SPCSV, Yield