

PARTICIPATORY EVALUATION OF SWEET POTATO VARIETIES

RESPONSE TO VIRUS INFECTION IN CENTRAL KENYA

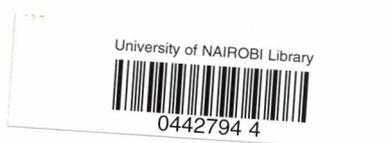
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ABSTRACT

Sweet potato is an important food and cash crop grown by small holder farmers but its productivity is limited by sweet potato virus disease (SPVD). Farmers' lack of disease free vines and inadequate knowledge on identification and management of the disease perpetuates the problem. Genotype based tolerance to the disease has been identified and it is a cheap and sustainable solution for increased productivity. The overall objective of this study was to evaluate and disseminate sweet potato varieties tolerant to SPVD and with farmer and market preferred traits. A structured questionnaire was used to obtain information on production constraints at Kibirigwi, Kirinyaga from small holder commercial sweet potato farmers. Technologies for maintaining nurseries free from virus vectors were assessed. Additionally, response of sweet potato varieties to SPVD was assessed on-station and on farmers' fields between May 2006 and March 2007. Viruses infecting sweet potato were evaluated using nitro cellulose membrane enzyme linked immunosorbent assay. Rouging and insect proof net and plastic cover maintained the vines apparently clean. Insect proof net costed three times more than polythene but minimal costs were incurred through rouging. Farmers in Kibirigwi were not aware of SPVD and used infected material to establish the crop. Marketability, high yield and early maturity were the most important criteria farmers used to score varieties. The marketability traits were skin colour, high sugar and dry matter content, fibrelessness, tuber shape and size. Susceptible varieties were infected by more than two viruses and had lower yield compared to tolerant varieties. Farmer participation in problem identification and management of diseases provided a forum for training, identification, multiplication and dissemination of varieties tolerant to SPVD.