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Evaluation of orange-fleshed sweetpotatoes varieties for resistance to sweetpotato virus disease

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Abstract. Use of orange-fleshed sweet potatoes (OFSP) rich in ß-carotene, a precursor for vitamin A in the body, is being promoted as a food based approach to combat vitamin A deficiency in diets among vulnerable communities in Uganda. A number of OFSP varieties have been identified and tested. However, sweetpotato virus disease (SPVD) is a major production constraint in Uganda and most of the introduced OFSP materials have succumbed to the viral damage. It is important that before the OFSP are passed to the farmers they are evaluated for desired attributes. Thus experiments were conducted to evaluate different promising OFSP varieties in Uganda. These included SPK004, Zapallo, Naspot5, Ejumula, and Kala. New kawogo served as a SPVD-resistant, the control. The trial was laid out in a randomized complete block design with varieties as treatments replicated four times. Mean number of plants with SPVD symptoms varied among varieties with New Kawogo being least affected. Total fresh weight, marketable weight and mean number of storage roots per plant varied significantly among varieties. The local cultivar Ejumula had a high yield but also had a high incidence of SPVD. Kala and SPK004 suffered the highest weevil damage in the first rains. There was non-significant negative correlation ($r = -0.23$, $P = 0.65$; $r = -0.16$, $P = 0.17$) between yield and cumulative SPVD incidence in both seasons. Susceptible varieties still yielded highest and are capable of yielding higher if SPVD is checked using cultural control methods such as roguing, planting clean vines and planting new fields at a distance (at least 100m).