

ABSTRACT

To address soil-borne virus diseases; a soilless media has been introduced for producing healthy seed tuber based on *in vitro* rapid multiplication of virus-free planting material. The objective of this study was to determine the effect of different media on the growth of potato variety using apical rooted cuttings. A greenhouse study was carried out where five media types; coco-peat + perlite, sand, coco-peat + pumice, coco-peat + vermiculite, and soil were tested along with three local potato varieties (*Shangi*, *Unica* and *Wanjiku*). The study was a 3×5 factorial arrangement laid out in a randomized complete block design (RCBD). Data collected was subjected to a general linear model (GLM) to partition the variance component using SAS software version 9.0 and means separated using Tukey's Honestly Significant Difference Test (HSD) at $P \leq 0.05$. The interaction between varieties and different media had a significant effect on the number of tubers per plant. *Shangi* registered the highest number of mini tubers per plant (21 tubers) on coco-peat + perlite which was not significant different from that of coco-peat + pumice mixture (19 tubers). Plant height of 53cm was recorded under coco-peat + perlite mixture. Highest shoot fresh weight was recorded on *Shangi* (24.86g/plantlet) cultivated on coco-peat + pumice mixture, followed by *Unica* and *Wanjiku* (24.64 and 21.17g/plantlet respectively) cultivated on coco-peat + perlite mixture. *Unica* produced the highest yield (64.8g/plantlet) in coco-peat + pumice, followed by *Wanjiku* (59.8g/plantlet) and *Shangi* (40.8g/plantlet) in coco-peat + perlite. This study recommends that for farmers to overcome spread of pests and diseases, use of coco-peat + perlite and coco-peat+pumice as a soilless media should be promoted to enhanced seed potato growth and tuber formation.

Keywords: coco-peat, perlite, pumice, sand, vermiculite