



Grafting compatibility between selected rootstocks and Tanzanian local tomato cultivars

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ABSTRACT

Objective: The objective of this study was to evaluate the effect of different rootstocks on graft success of Tanzanian local tomato cultivars. Eggplant rootstocks (EG190, EG195, EG203 and EG219, and tomato rootstock (Hawaii 7996) were obtained from AVRDC in Taiwan while local tomato cultivars (Tengeru 97, Tanya, Cal-J and Riogrande) were sourced locally.

Methodology and Results: Cleft graft method was carried out when seedlings of eggplant, Hawaii 7996 and local tomato cultivars were 30, 17 and 14 days old, respectively. The grafted seedlings with graft union tied using grafting clips were healed in a dark chamber for three days and then in a transparent chamber for three days. The average temperature and relative humidity in both chambers were maintained at 21-30°C and 85-95 %, respectively. The grafted seedlings were hardened for seven days in an open nursery with 30% overhead shade prior to transplanting. Data on graft success were subjected to analysis of variance using MSTATC statistical software and treatments mean separation was conducted based on Student-Newman Keuls at $P < 5 \%$. Results show that graft success between eggplant rootstocks and local tomato cultivars was higher ranging from 86 to 100%. On the contrary, grafting rootstock Hawaii 7996 with local tomato cultivars significantly ($P \leq 5\%$) resulted in a lower graft success ranging from 30 to 50% during the hardening stage in the open nursery.

Conclusion and application of results: Tanzanian local tomato varieties can be grafted onto eggplant rootstocks EG190, EG195, EG203 and EG219 with high graft success. As these eggplant rootstocks are resistant to soil borne diseases, farmers should graft their varieties in order to increase tomato yield. Further studies are therefore required to optimize the grafting conditions to improve graft success between rootstock Hawaii 7996 and local tomato cultivars.

Key words: Grafting, Rootstocks, Local varieties, Tomato, Tanzania