

Effects of grafting on morphophysiological and yield characteristic of eggplant (*Solanum melongena* L.) grafted onto wild relative rootstocks

ABSTRACT

Grafting is regarded as an integral component of sustainable vegetable production. It is important in the management of soil-borne diseases, and reports suggest that grafting with viable rootstocks can enhance crop growth and yield. This research was conducted using splices and cleft grafting techniques to investigate graft compatibility among varieties of high yielding eggplant scion (MCV1, MCV2, CCV1, CCV2, CCV3, NCV, and TCV) grafted onto wild rootstocks (MWR, BWR, and TWR) to study their morphophysiological and yield characteristics. High yielding scions grafted onto wild relative rootstocks were compared with two controls including self-grafted and non-grafted. All the scion had a high rate of germination ($\geq 95\%$) and remarkable graft success (100%) was recorded in MCV1, MCV2, and TCV using the cleft techniques. Generally, the use of rootstocks resulted in higher total and marketable fruit yield compared to the non-grafted and self-grafted scion plants, respectively. In particular, MWR and TWR rootstock conferred the highest vigour to the scion, resulting in the highest values recorded for total and marketable fruit yield, number of fruits per plant and average fruit weight. A similar result was obtained in fruit length and diameter, where long and wide fruits were observed in scions grafted onto MWR and TWR rootstocks, respectively. Grafting of high yielding eggplant scion onto resistant MWR, BWR and TWR eggplant rootstock was found to be beneficial for eggplant cultivation. The remarkable compatibility and vigour of the rootstock with scion led to the improvement in total and marketable yield of the fruits. As such, it can be concluded that the use of wild relative rootstocks of eggplant species can be a valuable method of improving eggplant production.

Keyword: Eggplant; Splice grafting; Cleft grafting; Scion-rootstock combinations; *Solanum torvum*