

GRAFTING AS A TOOL TO MANAGE BACTERIAL WILT IN TOMATO (*Solanum lycopersicum* (L.) VARIETY *THILINA*)

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Bacterial wilt (BW) is an economically important, soil-borne disease that causes 10–100% of crop loss in tomatoes. Tomato variety *Thilina* is moderately resistant to BW, though it possesses desirable fruit characteristics, including thick pericarp. Grafting of a variety *Thilina* with the BW resistant rootstocks can protect it from BW in an eco-friendly manner. This study assessed the BW resistance of *Thilina* grafted with BW resistance rootstocks. Two tomato varieties: Lanka sour and T245, *Pepino* (*Solanum muricatum* Aiton), and eggplant (*Solanum melongena* (L.)) variety *Padagoda* were selected as BW-resistant rootstocks to wedge graft with tomato variety *Thilina*. Non-grafted *Thilina* was used as the control. Topsoil heavily contaminated with the causal organism of BW from the previous cropping season, was used for transplanting all the plants. Grafting success, wilting percentage, growth, flowering, and fruiting characters were evaluated. Data were analysed by one-way analysis of variance (ANOVA) using SAS software, and means were separated by Duncan's multiple range test at $p \leq 0.05$. The highest grafting success was recorded with the rootstock *Padagoda* (85%), followed by Lanka sour (66%), T245 (54%), and *Pepino* (29%). A significantly lower wilting percentage was recorded in rootstock Lanka Sour (0%), *Padagoda* (3.13%), and *Pepino* (4.17%) compared to the non-grafted *Thilina* (37.5%), and T245 (9.38%), up to 60 days after transplanting. Maximum plant height and stem girth were exhibited in rootstock *Padagoda*, followed by T245 and Lanka Sour. The highest number of primary branches were recorded in rootstock Lanka Sour, followed by *Padagoda*, and T245. Variety *Thilina* produced more fruits when grafted with Lanka Sour, followed by T245 at 60 days after transplanting. The study confirmed that Lanka Sour, *Padagoda*, and *Pepino* rootstocks, when grafting with *Thilina* have the potential to manage BW. Further evaluations are needed to confirm these findings and optimize grafting for improved BW management.

Keywords: Grafting success, Resistance, Rootstock, Scion, Wilting