

# Identification of *Ralstonia solanacearum* resistant rootstocks for tomato grafting

Kanyua Stella<sup>\*1</sup>, Mwangi Maina<sup>1</sup> and Mbaka Jesca.<sup>2</sup>

<sup>1</sup>Department of Agricultural Science and Technology, Kenyatta University, Kenya.

<sup>2</sup>Horticulture Research Institute, Kenya Agricultural and Livestock Research Organization, Kenya

\*Corresponding author email: [ignastella@gmail.com](mailto:ignastella@gmail.com)

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## 1 ABSTRACT

Bacterial wilt, caused by *Ralstonia solanacearum*, causes severe losses to tomato (*Solanum lycopersicum* L). Current management measures are not fully effective. Grafting with resistant rootstocks may be an effective strategy for managing the disease. However, *R. solanacearum* populations maintain considerable diversity, and little information is known regarding the efficacy of available rootstocks for use in grafting to reduce bacterial wilt incidence and subsequent crop loss. Tomato belongs to family Solanaceae which includes other well-known species, such as eggplant (aubergine), peppers, tobacco and potato. The objective of this study was to identify bacterial wilt resistant germplasm that can be used as rootstocks in tomato grafting. The potential candidates for the study included species that belong to solanaceae family. Rootstocks included tomato cultivar Mt56, Eggplant (*Solanum melongena*), Capsicum and Sodom apple (*Solanum incarnum*). Tomato cultivars Anna F1 and Cal J were used as sources of scions. Diseased plants were collected from farmers' fields and bacterial inoculum isolated using CPG Medium with TZC used to identify distinct colonies of *R.solanacearum*. The inoculum was applied on the test plants by injecting into the soil planted with tomatoes. Disease severity data was recorded using 0 to 5 scoring scale. Data was subjected to ANOVA using Genstat version 15 and significantly different treatment means separated using LSD at  $P \leq 0.05$ . *Solanum melongena*, *Solanum incarnum* and tomato cultivar (Mt56) did not develop infection while tomato cultivar Anna F1 and Cal J (used as positive controls) and Capsicum developed infection. It was concluded that resistant germplasm to bacterial wilt exists and can be utilized to graft susceptible tomato cultivars and contribute to management of bacterial wilt.