# Efficacy and Cost Benefits of Grafting in the Management of Bacterial Wilt (*Ralstonia solanacearum*) of Tomato

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## Abstract

Bacterial wilt (*Ralstonia solanacearum*) is the second most important constraint to tomato production after Fusarium wilt in Kenya. This study was conducted to assess the efficacy of two tomato rootstocks, Kilele and Roma in the management of bacterial wilt of tomato. The experiment was conducted in a greenhouse that is naturally infested with bacterial wilt pathogen at the University of Embu. Three treatments were used, Kilele grafted to Roma, Roma grafted to Kilele and non-grafted Kilele. The experiment was laid out in a randomised complete block design with three replications. Plants were monitored for bacterial wilt symptoms immediately after transplanting. Disease related data such as days to the onset of wilting (DTOW), days to complete wilting (DTCW), disease incidences, disease severity and weights of different fruit qualities were recorded during the study period. Data on incidences and severity score, DTOW, DTCW, the weights of different fruit qualities per plant, graft take rate and graft survival percentage were coded and entered in MS Excel spreadsheet. Analysis of Variance (ANOVA) was performed on disease incidences, DTOW, DTCW, browning and oozing scores and yield whereas graft take and graft survival percentage were subjected to T-test using SAS software. Means were compared using the least significance difference (LSD) at 5% significance level. Bacterial wilt disease severity and incidence was reduced by 20% when wilt susceptible Roma cultivar was grafted onto Kilele rootstock. The study indicated that bacterial wilt can be managed to an extent by grafting susceptible varieties on tolerant rootstocks such as Kilele.