

## APPLICATION OF BACTERIOPHAGES AND TALC FOR THE CONTROL OF BACTERIAL WILT OF TOMATO UNDER FIELD MANURE APPLICATIONS UNDER CALCIUM BROWN SOILS

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A field experiment was conducted at Regional Agricultural Research and Development Centre, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura. Bacterial wilt caused by the soil borne bacterium, *Ralstonia solanacearum* is one of the devastating diseases of tomato all over the world. The present study was conducted to elucidate the influence of bacteriophages and talc on controlling bacterial wilt under field conditions, to determine the impact of silicon present in talc on yield and dry matter content and also to determine the impact of talc on survival of *R. solanacearum*. A field experiment was conducted using tomato variety *Thilina*. Treatment combinations of bacteriophage, talc and pathogen were applied to tomato plants, which were arranged according to a split-split plot design with three replicates. Percentage wilt incidence and days taken to show wilt symptoms were recorded and bacterial streaming method was used to confirm the pathogenicity of wilted plants. Total silicon content of the stem tissues was quantified and the survival of *R. solanacearum* due to application of talc was quantified by dilution plate technique on selective media. Correlation analysis was done between silicon content in tissues and wilt incidence and shoot dry matter content. Wilt incidence and yield per plant had a significant influence when inoculated with the pathogen. Density of *R. solanacearum* was significantly reduced by application of talc (i.e. a 6 fold reduction was observed in comparison to soil samples without talc). The results highlighted that application of bacteriophages as a mixture (two times before transplanting and four times after transplanting) and talc, either individually or in combination can reduce the wilt incidence and rate of wilt development.

**Key words:** Bacterial wilt, Bacteriophages, *Ralstonia solanacearum*, Talc, Tomato

Key words: Litter bag technique, Non Calciic Brown soil, Organic manures, Yield