

Biovar 2 of *Ralstonia solanacearum* Species Complex Causes Tomato Bacterial Wilt Disease in Tanzania

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Abstract

Background and Objective: Bacterial wilt disease (BWD) caused by complex species of *Ralstonia solanacearum* (RSSC) has been categorized as one of the most significant plant diseases in the world. It is a serious problem of tomato and causes significant economic losses of tomato in Tanzania. The purpose of this study was to determine biovars of RSSC causing tomato BWD in Tanzania. **Materials and Methods:** Tomato stems showing typical symptoms of BWD were collected from main agro-ecological regions and were characterized by pathological and carbohydrate oxidation tests. The least significance difference (LSD) procedure was used for mean separation ($p = 0.05$) of disease incidence and severity. **Results:** A total of 29 out of 40 RSSC isolates from infected tomato stems produced typical colonies of RSSC on triphenyl tetrazolium chloride medium out of which 19 (52%) were pathogenic on tomato variety Tanya. Carbohydrate oxidation test showed that most (90%) predominating isolates in main agro-ecological regions belong to biovar 3 while the rest (10%) belong to biovar 2 and prevail in the southern zone of Tanzania. This is the first report of prevalence of biovar 2 of *Ralstonia* in Tanzania and suggests a recent introduction of biovar 2 in tomato fields in Tanzania. **Conclusion:** Biovar 2 of RSSC is reported for the first time to cause tomato bacterial wilt disease in Tanzania. This alerts plant health regulators to embark on necessary phytosanitary measures to prevent further spread and/or introduction of the disease considering its quarantine status in different countries.

Keywords

Carbohydrate oxidation, pathogenicity, isolates, TTC medium, virulence