



First confirmed report of bacterial wilt of tomato in Georgia caused by *Ralstonia solanacearum*

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In June of 2010 a wilt disease affecting tomato seedlings was reported by farmers in Chkhorotsku region, Western Georgia, causing up to 100% plant loss. Anecdotal reports suggested that eggplant and sweet pepper plants on farms in the same region were also infected. Similar symptoms, indicative of bacterial wilt caused by *Ralstonia solanacearum* which included wilting and vascular discolouration (Fig. 1) were also observed in 2010 by farmers in Kutaisi region, and the disease was observed in tomato plants examined in a plant health clinic in Kutaisi in July 2011. Symptoms observed in these specimens included wilting of entire plants (Fig. 2) and vascular discolouration (Fig. 3). Samples were taken for further analysis at Shota Rustaveli State University Scientific Centre in Georgia and the Food and Environment Research Institute (Fera), UK.

Initial diagnosis was carried out at Shota Rustaveli State University by amplifying a DNA extract obtained from infected material with primers OLI1 and Y2 (Seal *et al.*, 1993), which indicated the presence of *R. solanacearum*. An isolate was also obtained from infected material at Fera, which was identified as *R. solanacearum* by real-time PCR amplification as described by Weller *et al.*, (2000). Analysis of whole cell fatty acids was also undertaken (Stead, 1992) which identified the organism as *R. solanacearum* with a similarity index of 0.856. Tomato seedlings inoculated with this isolate exhibited wilt symptoms five days after inoculation, and the bacterium was successfully re-isolated from wilted tomatoes. Our investigations have therefore confirmed that *R. solanacearum* is present and causing wilt disease of tomato in Georgia. This is the first report of bacterial wilt caused by *R. solanacearum* in Georgia substantiated by isolation and identification of the bacterium. The presence on tomato is highly significant as this is a valuable crop for

farmers in many regions across Georgia.

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Figure 1



Figure 2



Figure 3

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