



## First report of bacterial spot caused by *Xanthomonas campestris* pv. *vesicatoria* race 2 on tomato in Nepal

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Tomato is one of the most important vegetable crops in Nepal. During the spring of 2009, dark, circular and water-soaked lesions of about 3 mm in diameter were observed on leaves of tomato plants (*Solanum lycopersicum* cv. Pusa Ruby), in three different commercial farms at Indrapur, Banke district, Mid-western region. Disease incidence was estimated to be in the range 50-60%. Yellow-pigmented bacterial colonies were consistently isolated from diseased tissues on yeast extract-dextrose-calcium carbonate agar medium (YDC) and incubated at 26 ± 1°C. Six isolates were identified as *Xanthomonas campestris* pv. *vesicatoria* on the basis of morphological and biochemical tests. All the isolates were Gram-negative, rod shaped, motile, aerobic, oxidase negative, catalase positive and amyolytic positive. All six isolates grew on Tween medium (McGuire *et al.*, 1986).

Pathogenicity was confirmed on tomato plants (cv. Pool Rex Bio) in a greenhouse by spraying four healthy potted plants for each isolate with a bacterial suspension (10<sup>8</sup> cfu/ml). A known strain and sterile distilled water were used respectively as positive and negative controls. All strains caused symptoms similar to those observed in the field within a week of inoculation. The race of the pathogen was distinguished by another pathogenicity test on cvs. Hawai 7998, Hawai 7981 and John Baer. The first two are resistant respectively to races 1 and 3 and all of them are susceptible to race 2 of the pathogen (De Souza *et al.*, 2008). The bacterial isolate caused symptoms on all three cultivars, confirming that it belongs to race 2. Bacteria re-isolated from the necrotic lesions were shown to be identical to the original strains according to the morphological, cultural and biochemical tests described above. Molecular identification was achieved by sequencing the 16S rDNA region (GenBank Accession No. GU075707, strain NEP XCV09). The sequence shared 99% identity with the analogous sequence of *X. campestris* pv. *vesicatoria* (syn. *X.*

*vesicatoria*; Jones *et al.*, 2004) type strain (AY288080). This pathogen has already been reported from China (Jilin, Xinjiang) and India (Andhra Pradesh, Delhi). Contaminated seeds and/or transplants may have been the source of introduction of this pathogen to this region of Nepal from neighbouring areas of India. To the best of our knowledge, this is the first report of bacterial spot on tomato plants in Nepal.

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