ANALYSES OF PTO AND FEN GENES IN TOMATO CULTIVARS

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Pto and Fen are genes in linkage in tomato genome. Pto confer resistance against Pseudomonas syringae pv. tomato (Pst), the causal agent of bacterial speck; Fen confer susceptibility to the insecticide Fenthion. Breeders assay tomato lines for resistance against Pst by spraying Fenthion than bacterial inoculation. Nevertheless, using this system of selection, it’s possible loss of resistance against Pst by segregation of Pto and Fen. In the 2002, some tomato cultivars classified as resistant to Pst, showed bacterial spots during natural infections. Previously studies performed on avrPto gene in Pst strains isolated from these cultivars, showed large presence of this avirulence gene, that interact with Pto generating resistance. These results support the hypothesis that loss of resistance in these tomato cultivars is probably due to loss or mutation of Pto.

In this work, these cultivars were analysed for the presence of Pto by PCR. Analyses were performed also on tomato and reference cultivars that showed really resistance against Pst; analyses for the presence of Fen were performed too. The amplification of Pto in some cultivars was in agreement with their susceptibility to Pst but, sometime, Pto was amplified in susceptible cultivars. To test functionality of Pto in these last cultivars, investigation about Pto sequence and Pto expression are in progress.