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Development of PCR-SSCP technique to detect bacterial wilt pathogen of vegetables

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Polymerase chain reaction-single strand conformation polymorphism (PCR-SSCP) is a sensitive, simple and rapid technique for the detection and identification of DNA polymorphism or sequence variation. We have adapted this technique to identify phytopathogenic *Ralstonia solanacearum* the bacterial wilt causing pathogen in vegetables. 56 isolates of *Ralstonia solanacearum* were isolated from different parts of Karnataka, India from infected plant material/ soil samples, subjected to various biochemical/ physiological tests, hypersensitivity test, pathogenicity tests and amplification with lpx upstream region specific primer which is designed to lpx upstream region to confirm the pathogen. PCR-SSCP technique is employed to generate DNA fingerprints of all the 56 isolates of *Ralstonia solanacearum*. With the use of universal primer 16S rRNA, PCR-SSCP could discriminate bacterial wilt causing pathogen when compared to other phytobacterial pathogens. This approach employs PCR of bacterial DNA with 16S rRNA primers, and analysis of the amplified product based on the principle of SSCP. The PCR product was denatured and separated on a non-denaturing polyacrylamide gel. SSCP banding patterns were detected by silver staining of nucleic acids. The mobility of the single-strand DNA is sequence dependent and could be used to identify unknown *Ralstonia solanacearum*. The possible use of PCR-SSCP technique for the specific detection of bacterial wilt causing pathogen of vegetables discussed in the present study.