Biochemical and Molecular Characterization of *Erwinia* Species Causing Tip-over Disease of Banana

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ABSTRACT

Tip-over disease caused by pectolytic Erwinias is becoming a serious threat to banana plantations. Several workers in the past have reported it to be caused by *Erwinia carotovora* subsp *carotovora, Erwinia carotovora* subsp *atroseptica,* and *Erwinia chrysanthemi.* Morphological, biochemical and molecular studies were carried out to identify the exact cause of the disease. Of the nine isolates from different agro climatic regions of Karnataka and Andhra Pradesh, two isolates were similar to *Erwinia chrysanthemi* and the remaining isolates were similar to *Erwinia carotovora subsp carotovora*. Further, restriction fragment length polymorphism also showed the presence of two groups. Polymorphic banding pattern was obtained using *Alu I* and *Rsa I* enzymes indicating variation among isolates. It was found that *Erwinia carotovora* subsp *carotovora* is distributed in moderate climatic conditions where as *Erwinia chrysanthemi* is distributed in warmer regions. Thus the distribution and spread of *Erwinia* species is found to be influenced by environmental conditions.

Key words : Banana, Biochemical characterization, Erwinia, RFLP, Tip-over disease.

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