

**B-90: Detection of toxigenic strains of *Bacillus thuringiensis* with random amplified polymorphic DNA ( RAPD ) via polymerase chain reaction**

B H R Ranamalie, J M Dhananjani Bandara, J M R S Bandara  
(Dept of Agric Biology, Faculty of Agric, Univ of Peradeniya)

Insecticidal crystal proteins (ICP) are a group of bacterial toxins produced by strains of *Bacillus thuringiensis* (Bt) during sporulation. Some of these strains are now available as commercial formulations (thuricides) for the control of agricultural pests. Different Bt strains produce different ICPs that are specifically toxic to caterpillars, mosquitoes, beetles, etc.

A large number of highly toxigenic Bt strains were isolated locally. The prime objective was to clone the Bt delta endotoxin gene in vector pUC18. Endotoxin gene cloned in pUC18 will be used to obtain an insect resistant transgenic rice plant. Therefore it was imperative to have a quick marker or an easy detection system of Bt strains which are highly toxic to lepidopteran larvae.

Random Amplified Polymorphic DNA fingerprints were used to separate strains of Bt isolated locally. The amplification reactions were done with Taq DNA polymerase in a Corbett FTS 320 fast thermal sequencer PCR machine, overnight in 45 cycles. The primers used were obtained from Operon technologies.

RAPD fingerprints displayed by local strain 14J was essentially similar to berliner commercial strain. The differences exhibited in RAPD tests were sufficient to separate toxigenic from neutral strains. Mosquitocidal strains were different in RAPD from lepidopteran toxic strains.