B-91: Transposon Tn5 mutagenesis in pathogenicity genes of bacterial wilt pathogen *Pseudomonas solanacearum* - ginger strain by a "suicide" vector R 91-5.

W D Asha Jayawardane, B H R Ranamalie, J M Dhananjanie Bandara, J M R S Bandara
(Dept of Agric Biology, Faculty of Agric, Univ of Peradeniya)

Transposons have a number of advantages for mutagenesis over the classical chemical methods, such as the use of ethyl methane sulphonate (EMS) or nitrosoguanidine. The advantages lie in the ability for manipulation of mutated DNA.

Pseudomonas solanacearum causes a serious wilt condition in over 100 plant species. Ginger *(Zingiber officinale)* grown in Nikaweratiya was found to be infected with *P. solanacearum.* Only visible symptoms were poor growth, low yield and susceptibility to pythium infection. Ginger isolates obtained from the samples were heavy exopolysaccharides (EPS) producers. EPS is known to cleary link with pathogenicity and located on a megaplasmid in the bacterium.

A Tn5 insertion sequence was transferred to *Pseudomonas solanacearum* EPS (ginger strain) by conjugation of a plasmid from *Pseudomonas aeruginosa* PAO 1826 which is a suicide vector R 91-5 referred here as pMO 75.

Donar carried the Kanamycin resistance (km^r) gene with it and mutants were detected by Kanamycin resistance of *Pseudomonas solanacearum, P. solanacearum* wild strains and ginger strain used were Kanamycin susceptible. EPS^-, Km^r *P. solanacearum* were non pathogenic indicating although no visible wilt symptoms are produced in ginger, pathogenicity of *P. solanacearum* is linked with the ability to produce EPS.