D-39: *In vitro* study of the interaction between *Xanthomonas campestris* pv *manihotis* and cells of cassava

N Deshapriya
(Dept of Botany, Univ of Kelaniya)

In a study of the interaction between *Xanthomonas campestris* pv *manihotis* (Xcm) and cassava, 3 tissue culture systems i.e. plantlets, callus cultures and suspension cultures were developed. Of these, the suspension culture system proved to be the most suitable to study the susceptible response.

Cassava cells from suspensions of a susceptible cultivar (M Col 113) in lag (5 day), early (10 day) and mid log (20 day) phase were used to examine the influence of age on response to Xcm. Plant cells were suspended in 1/10 strength Murashige & Skoog (MS) medium to give a 1% v/v concentration. 5 ml of the bacterial suspension in sterile distilled water (SDW) (isolates 2967 & 3194) with 1 x 10^8 cfu/ml were added to this to give a final concentration of 1 x 10^7 cfu/ml. The controls consisted of plant cells in 45 ml of 1/10 strength MS with 5 ml of SDW. Cassava cell viability was determined at daily intervals using the vital stain fluorescein diacetate.

Co-culture with either isolate 3194 or 2967 resulted in death of cells of cassava cultivar M col 113, although the susceptibility of the cells varied with age. Isolate 3194 caused 80% (when the initial viabilities are considered) host cell death by 7, 5 and 3.5 days in 5, 10 and 20 day old suspension cultured cells respectively. This varied significantly ($P < 0.05$) from the controls. Co-culture with isolate 2967 showed a similar trend. Thus, suspension cultured cells of cassava proved to be a suitable system to study interaction between Xcm and cassava cells. The system could also be used for testing the possible involvement of bacterial toxins or enzymes.