D-37: *In vitro* selection for paraquat tolerance in *Psophocarpus tetragonolobus* (L.) DC.

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In vitro culture of cells via callus or cell suspensions may impart genetical variation described as somacional variation. Mutant selection can be practiced on these culture systems to obtain novel phenotypes. The present work reports on the in *vitro selection* of cell lines that exhibit tolerance to the herbicide paraquat.

Suspension cultures were started with well proliferating callus isolated from *P. tetragonolobus* cotyledonary explants. The concentration of paraquat that caused total inhibition of growth of wild type cells in the cell suspensions was determined by a dose response experiment. Fresh weight gain over a 2 week period, in cell suspensions that contained various concentrations of paraquat, was determined relative to that of a control. The concentration of paraquat at which zero weight gain, or 100% inhibition of growth of cells, was found to be 0.005 M. Selection for paraquat tolerance was performed at this concentration by plating fresh aliquots of fine suspension cultures on 0.005 M paraquat incorporated selective medium, followed by the isolation of mutant cell colonies which grew after a 4 week incubation period. Confirmation of paraquat tolerance must await tests on whole plants regenerated from these cell lines.