B 284

Callusing responses and plant regeneration capacity of Capsicum varieties

Chilli [Capsicum spp] is an important spice crop in Sri Lanka. However most of the cultivated varieties of Capsicum lack resistance to pests, pathogens or environmental stresses. Inter specific hybridization is one solution to overcome this problem. Callus culture and plant regeneration was carried out using several chilli accessions as one step for the distant breeding in *Capsicum*.

Seeds of three varieties of Capsicum annuum, {MI-1, MI-2, and BL-39} and four varieties of C. Frutescens, {Heen Kochchi (Acc. No. 01093), Kochchi (Acc. No.01075) and Sudu Kochchi }were established in hormone-free half strength MS medium. Hypocotyl, cotyledon and root explants were obtained from in vitro grown seedlings fo each variety for callus induction in Ms media supplemented with 2,4 –D ($0.5mgl^{-1}$) and kinetin ($0.4mgl^{-1}$).

Callus formation was achieved four weeks after culturing , and cotyledon explants showed the highest number and fresh weight of calli in all the varieties. Cotyledon calli of MI –1, MI-2, Kochchi (acc. No. 01093) and Sudukochchi were selected for the regeneration study based on calli fresh weight. These calli were then placed on regeneration media with 36 combinations of auxins (IAA, NAA) and cytokinins (kinetin, BAP). Roots appeared on MI –2 calli, six weeks after culturing in media supplemented with NAA ($1mgl^{-1}$) and BAP ($1mgl^{-1}$) No shoots were detected in any of the above combinations for selected shilli varieties but greening of MI –1 and MI –2 calli were observed in some BAP-NAA combinations (BAP 1-2 mg $^{-1}$ and NAA 0.5-$1mg^{-1}$) three weeks after culturing.