

**In Vitro Callus Induction from Seed, Leaf and Protocorm Explants
of *Paphiopedilum rothschildianum***

ABSTRACT

This research was conducted to investigate the effects of different types of explants on the formation of *Paphiopedilum rothschildianum* callus. Seed, Leaf Segments (LS), Seed-Derived Protocorms (SDP) and Secondary Protocorms (SP) were cultured on half-strength (MS) Media Supplemented with 5 mg/L 2, 4-Dichlorophenoacetic acid (2,4-D) and 1 mg/L 1-phenyl-3-(1-23-Thiadiazol-5-yl)-urea (TDZ). Lower percentage of seed 73.5±14.3 and SP 65.0±22.4% formed callus as compared to SDP 87.5±16.9%. However, the mass of callus induced was highest on SP as compared to SDP and seed explants. Leaf explants failed to form callus and died after 40 days of culture. Callus started to form on seed, SDP and SP after 30 days of culture. Further, study on SDP shows that 3 months old SDP cultured on medium with 1 mg/L TDZ and 4 mg/L 2,4-D was the best explant for callus induction with 82.5%±16.9 explant forming callus recorded as compared to 81.3±12.5 and 72.0±11.0 for 1 and 6 months old SDP, respectively. Calli produced from the present study slowly regenerates into Protocorm Like Bodies (PLBs) and develop shoots and leaflets that further grow into plantlets after 120 days of culture on development medium.