

Asymbiotic Seed Germination, Mass propagation and Conservation of Fox-tail orchid, *Rhynchostylis retusa* L. Blume: An endangered orchid

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ABSTRACT

Experiments were carried out to identify the correct maturity stage for *in-vitro* seed germination and to develop an *in-vitro* protocol for mass propagation of *Rhynchostylis retusa*. After hand pollination of the flowers the length, girth and color changes of the pod were observed in weekly intervals in order to determine the morphological indicators for maturity. *In-vitro* seed germination was done 3, 4, 5, 6 and 7 months after pollination on nine media viz 1. Murashige and Skoog medium (MS) 2. MS with PVP (2g/L) 3. MS with charcoal (2g/L) 4. Knudson C medium (KNC) 5. KNC with PVP (2g/L) 6. KNC with charcoal (2g/L) 7. KNC with banana extracts (75g/L) 8. Vacin and Went medium (V&W) 9. V&W with banana extract (75g/L) and coconut water (150ml/L). Results revealed that six months after pollination was the best stage for *in-vitro* seed germination of *R. retusa*. Significant germination was observed only on MS with PVP, MS with charcoal, KNC with banana extracts and V&W with banana extracts and coconut water ($p \leq 0.05$). KNC with banana extracts and V&W with banana extracts and coconut water gave 100% seed germination. Six- month-old pods took 20 days to germinate. In vitro derived plantlets were acclimatized in coconut husk chips with 75% survival.

Key words: biodiversity, conservation, embryo culture, endangered orchids, mass propagation, tissue culture

