

Regeneration of Plantlets from *In Vitro* Raised Leaf Explants of an Orchid; Var. *Rhynchosstylis retusa*

¹Hossein Piri* and ²Ebrahim Saboki

¹Agriculture and Environmental Department, Velayat University of Iranshahr, Iranshahr, Iran

²Research Education, Agricultural and Resources Center of Balouchestan, Iranshahr, Iran

*Corresponding author: hsalar1970@gmail.com

Abstract

In the present investigation, young leaves were selected as the young tissue is known to regenerate better due to their less rigid cell walls. The regeneration competence was significantly influenced by the juvenility of leaves, basal media, PGRs in the medium and orientation of explants on the medium. Leaf explants showed swelling initially at their bases after 25 days of culture. In the basal medium, the explants, remained recalcitrant to regeneration and turned brown within 35 days and subsequently perished. The reactivity of the explants to BAP (benzyl adenine purine) almost was obligatory to the application of NAA (Naphthalene acetic acid) in the medium. The NAA in combination with IBA (Indole butyric acid) proved beneficial in activating accessory bud of regeneration. The 50% percent of explants responded to NAA+BAP (1.5mg l⁻¹ each) treatment. Well-developed rooted plantlets formed either from direct shoot production or indirectly from PLBs in the induction medium. As many as 25 healthy rooted plantlets with 2-3 leaves and 1-2 roots could be obtained in 140 days of cultures.

Keywords: Orchidaceae, *In vitro*, M medium, Plant Growth Regulators, *Rhynchosstylis retusa*