

Asymbiotic seeds germination and seedlings Development of vanda dearie

ABSTRACT

The effects of basal media, complex additives, plant growth regulators and carbon sources on in vitro seeds germination and seedlings development of *Vanda dearei* are reported. An immature seeds from four months old capsule was used as plant material. All cultures were grown under 24h light at $25\pm 2^{\circ}\text{C}$. Results showed that seeds cultured on KC basal medium were germinated after 25 days with $63.0\pm 3.2\%$ of germination rate followed by $\frac{1}{2}\text{MS}$ ($45.4\pm 10.4\%$) and VW ($41.8\pm 4.0\%$). Addition of 0.5% (w/v) yeast extract has significantly enhanced ($85.9\pm 0.7\%$) seed germination and shortening germination time to 23 days. 0.1mg/l NAA had similar performance ($80.2\pm 20.5\%$), however, this treatment delay seeds germination and induced necrosis to protocorm development. Sucrose at 1% (w/v) also enhanced seed germination ($98.3\pm 2.3\%$), while glucose and fructose treatments showed moderate effects. For growth and development of protocorms, KC basal media recorded the highest percentage of explants with root ($37.0\pm 4.3\%$), mean number of leaf (4.50 ± 1.00) and mean number of root produced (2.0 ± 0.6) with largest leaf area ($3.7\times 2.3\text{mm}$) and longest root length ($11.7\pm 8.4\text{mm}$). Addition of 20% (v/v) coconut water is significantly improving protocorm development and shoots growth.