

Induction of protocorm-like bodies (plbs) and plant regeneration in cymbidium chloranthum (orchidaceae)

ABSTRACT

Cymbidium chloranthum Lindl. is an indigenous orchid native to Sabah and several tropical countries in Asia. The significant horticultural value of orchids has led to many wild orchid species being threatened with extinction due to overcollection and habitat destruction. In this study, an efficient protocol for the *in vitro* regeneration and mass propagation of this orchid was developed. Protocorms of *C. chloranthum* were cultured on Murashige and Skoog (MS) basal medium containing plant growth regulators (PGRs) such as meta-Topolin (mT) and 6-benzylaminopurine (BAP) at concentrations of 0.5 or 1.0 mg/L, and coconut water (CW) at 5 or 10% (v/v). The cultures were incubated at 25±2°C under 12h of photoperiod. The MS basal medium devoid of any PGRs served as a control. After 90 days of culture, the combination of 0.5 mg/L mT and 0.5 mg/L BAP significantly promoted 2.97±0.53 shoots and 3.83±1.07 roots, respectively. The same treatment also promoted protocorms multiplication with an average production of 2.24±0.55 PLBs. During the acclimatization phase, 66% of the regenerated plants survived. The fully acclimatized plants were reintroduced into their natural habitat in Tenom Orchid Centre. The current approach offers a sustainable way to meet commercial demand while conserving the remarkable species in its natural habitat.