Abstract

Chlorophytum arundinaceum is an important medicinal plant and its tuberous roots are used for various health ailment treatments. It has become an endangered species in the Eastern Ghats, and a rare medicinal herb in India, due to its excessive collection from its natural habitat and its destructive harvesting techniques, coupled with poor seed germination and low vegetative multiplication ratio. In order to contribute to its production systems, an efficient protocol was developed for in vitro clonal propagation through shoot bud culture. For this, multiple shoots were induced from shoot bud explants on Murashige and Skoog’s medium supplemented with 2.5-3.0mg/L BAP, 0.01-0.1mg/L NAA and 3% (w/v) sucrose. Inclusion of Adenine Sulphate (25mg/L) in the culture medium improved the frequency of multiple shoot production and recovered the chlorotic symptoms of the leaves. Media having pH 5.9 and 4% sucrose showed significant improvement on shoot bud multiplication and growth. In vitro flowering was observed when the subcultures were carried out for over four months in the same multiplication media. Rooting was readily achieved upon transferring the shoots on to half- strength MS medium supplemented with 0.1mg/L IBA and 2% (w/v) sucrose. Micropropagated plantlets were hardened in the green house, successfully established, and flowered in the field. This method could effectively be applied for the conservation and clonal propagation to meet the demand of planting materials.

Keywords

Liliaceae, medicinal plant, pH, sucrose.