ABSTRACT

This research study was conducted to establish an efficient and conceptive protocol for the optimization of *in vitro* propagation of *Eucomis comosa* cv. Pineapple Lilly. The explant was isolated from the bulb of the plant. Twin scale technique was used in this experimental study for direct plant propagation. Surface sterilization of the explant was achieved by treating it with sterilants, such as 0.1% tween-20, 70% ethanol, and 30% bleach. The surface sterilized explants were cultured on MS medium supplemented with single and combined PGRs after culturing, the culture tubes were placed in growth room under controlled condition at 25 ± 2°C and photo-period of 16 h of light and 8 h of the dark period was maintained. The explant showed higher growth activity under yellow light than with white. The effects of PGRs were observed in terms of shoot and root initiation and length. The best response of shoot initiation and proliferation was achieved at 4.4 mgl^{-1} BAP + 6 mgl^{-1} 2,4-D. The longest roots were observed under the influence of 4.4 mgl^{-1} TDZ and 2.54 mgl^{-1} IAA. The root induction was observed under cytokinins. The development of an efficient and decisive protocol for *in vitro* propagation provides an effective means of clonal propagation of *E. comosa* cv. pineapple lilly.