DEVELOPMENT OF PROTOCOL FOR *IN VITRO* PROPAGATION OF GLADIOLUS

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ABSTRACT

This study was conducted to develop an efficient protocol for *in vitro* propagation of gladiolus. Corms and cormlets were used as explants. Six different combinations of 1% Sodium hypochlorite and 70% of Ethanol were used to select the best sterilization method as the first experiment. In the second experiment, the sterilized explants were cultured on MS medium with three different hormone combinations of NAA, 2, 4-D and BAP to investigate the effect on callus induction. Then MS supplemented with different hormone combinations of NAA, 2, 4-D, BAP, BA and IBA and different sucrose levels on shoot and root induction of corms were tested as the third experiment. In the experiment 01, pieces of corms and cormlets sterilized using 70% of Ethanol for 15 minutes and 1% Sodium hypochlorite for 5 minutes were showed pronounced effect which resulted minimum number of contaminated vessels after one week of culturing. Corms slices cultured on MS supplemented with 4 mg l^{-1} NAA was recorded the minimum days to callus initiation and it was recorded the highest fresh weight (0.07513 ± 0.02336 g) and the highest diameter of the calli (0.8267 ± 0.1861cm) in experiment 02. The highest shoot length (2.7533 ± 0.2656 cm) was recorded on the MS medium supplemented with 4 mg l^{-1} NAA and the highest fresh weight (0.06857 ± 0.02049 g), the highest number of shoots per culture (4.3333 ± 0.5774) and minimum days to initiate the shoots were recorded on MS medium supplemented with 4 mg l^{-1} NAA and 1 mg l^{-1} BAP and MS medium supplemented with 2 mg l^{-1} IBA and 5% sucrose level was recorded the highest and earlier root induction.

Key words: Gladiolus, NAA, Callus induction, 2, 4-D, IBA, Corm