Abstract

Basal medium BDS was chosen for in vitro culture of the onion. The explants suitable for culturing were stem-base taken from seedling, stem tip and bulb. Stem-base explant was best for callus induction when cultured on the agar medium containing 0.2 mg/l 2.4-D and 0.1 mg/l kinetin under light condition. Callus tissue was also used as an experimental explant.

Stem-base explant regenerated only single shoot on the medium containing NAA and kinetin while callus explant produced multiple shoots on the medium supplemented with 0.2 mg/l NAA and 2.0 mg/l kinetin. Embryo-like structure was found on the medium containing 0.5 mg/l NAA and 0.2 mg/l kinetin.

Various combinations of NAA and BAP induced single shoot, dishoots and multiple shoots from cultured stem-base and bulb explants without callus formation. Only single shoot and dishoots were regenerated from stem-tip explants. BAP was essential for dishoots and multiple shoots induction. Without BAP, only single shoot was regenerated. NAA together with high concentrations of BAP regenerated more multiple shoots than dishoots from those explants. Histological studies showed that new shoots were induced from meristem tip, meristem of original axillary bud located at the base of scale leaf and/or newlyformed meristem induced from the original one.