ABSTRACT

The current study described the *in vitro* regenerated plantlets of chickpea (*Cicer arietinum* L.) var. CM-2008. Due to recalcitrant attitude of chickpea, there is need to generate optimized *in vitro* regeneration procedure. Chickpea is affected by attack of borers at pod bearing stage. To get resistant plants against borers, it is required to introduce resistance in varieties through plant transformation. Transformation requires *in vitro* reproducible regeneration system. The Kabuli kind variety CM-2008 was chosen for the research work. Five explants *i.e* cotyledonary node, node, internode, shoot and root from seven days old seedings were subjected on Murashige and Skoog 's (MS) medium. Different concentrations of auxins (NAA and 2,4-D) individually or in combination with cytokinins (BAP and TDZ) were applied for induction of callus. In these, 2.0 mg/L NAA and 2.0 mg/L BAP supported the highest callus production. Shoot regeneration was attained with NAA and with combination of BAP and cocunut milk. At the concentration of 0.5 NAA showed the number of shoots (4) per callus. For direct regeneration, eight concentrations (0.5 – 4.0 mg/L) of BAP, KIN individually and in combination of BAP and KIN were analysed. One of the cytokinins, BAP was noticed to lead a beneficial increase in shoot multiplication reaction. Nevertheless, results attained that auxins and cytokinins individually were good choice as compared to combinations. The regenerated roots were successfully attained at the combination of 2.5 mg/L NAA+ 20 ml coconut milk with MS medium.