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Role of chlorocholine chloride on the *in vitro* PLBs organogenesis of *Phalaenopsis* 'Fmk02010'

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Abstract

Phalaenopsis orchid is one of the most important flowers in flower industry. We conducted an experiment to find out the response of different concentration of chlorocholine chloride (CCC) for the *in vitro* regeneration of protocorm like bodies (PLBs) of *Phalaenopsis* 'Fmk02010'. We used five different concentrations of CCC and these were 0 (control), 0.01, 0.1, 1 and 10 mgL^{-1} in modified MS medium and cultured for 42 days. We added two major salts ammonium nitrate (412.5 mgL^{-1}) and potassium nitrate (950.0 mgL^{-1}) to the MS medium for the modification. Maximum numbers of PLBs were found from media with 0.01 mgL^{-1} of CCC (15.667) and maximum fresh weight (0.211 g) as well. The 100% PLB formation rate was also found from 0.01 mgL^{-1} of CCC. We found 58.83% variation in number of PLBs (R^2=0.5883) and 47.44% variation in fresh weight (R^2=0.4744) to the different CCC concentrations. Our study suggested that increase in the CCC concentration negatively affect the PLBs organogenesis of *Phalaenopsis*. We can suggest that the addition of very low concentration of CCC in plant culture medium can increase the number, formation rate and fresh weight of PLBs of *Phalaenopsis*.

Keywords: *Phalaenopsis*, modified, MS medium, protocorm like bodies, and CCC

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