C-O-1

Development and Optimization of Procedure for *In Vitro* Production of *Cratoneuron decipiens* (Brid.) G. Roth. Moss

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Mass propagation of a pleurocarpous moss *Cratoneuron decipiens* was cultivated on different sterilization, propagation system, inoculums density and types, culture medium, sucrose concentration, nitrogen concentration, light intensity, temperature and liquid culture conditions. The moderate contamination and maximum survivability was shown using 1% NaOCl for 2 minutes on gametophyte tip culture and 1 minute on leaves culture and 70% ethanol with 1% NaOCl for 1 minute on capsule culture. The highest gametophyte number, maximum number of gametophyte/flax, was produced using 0.4 g inoculums density and the percentage of dry weight was increased in 0.1 g inoculums density on suspension culture comparaed to gametophyte tip and leaf culture. Among seven nutrient media, Knop (1865) macro salts with Nitsch and Nitsch (1956) trace element was best with regards to all characteristics. According to our findings, the effect of sucrose concentration increased the number and height of gametophyte on 1% sucrose. The 10 mM nitrate nitrogen was beneficial to growth. Light intensity of 2000 lx showed the highest positive influence on gametophyte length, fresh weight, number of gametophyte and propagation efficiency of plantlets. Temperature markedly promoted *in vitro* moss growth and the optimum temperature was 20℃. Compared with agar and liquid media, production of gametophytes was improved using a semisolid media in terms of quality and number of gametophytes. The suspension from gametophyte and secondary protonema was adapted to a semisolid medium in order to increase the number of gametophytes. With regards to the propagation system and culture conditions, the established process was optimized.