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IN VITRO STERILIZATION PROTOCOL OF *VANILLA PLANIFOLIA* EXPLANTS FOR MICROPROPAGATION

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ABSTRACT

Microbial contamination is one of the most serious problems of plant tissue culture. It is a major challenge to use field grown plants as a direct source of explant for the production of contamination free *in vitro* plantlets, because controlling fungal and bacterial contamination from field sources is very difficult. Therefore, surface sterilization is the most important step in preparation of explants for micropropagation. In the present investigation, an attempt was made to develop an effective surface sterilization protocol with an enhanced survival rate of nodal and shoot tip explants of vanilla by treating with various combination of mercuric chloride ($HgCl_2$), fungicides (carbendazim 'Derosal' 0.10%) and alcohol (70% ethanol) for varying time periods in order to establish maximum contaminant free cultures. Results showed that the highest percentage of explant response without any toxicity (death of the tissue) was obtained when the explants were exposed to 0.10 % $HgCl_2$ for 5 minutes (90.00 %) which was proved to be more effective on contamination control.

KEYWORDS: Contamination, Explant, *in Vitro*, Surface Sterilization, Vanilla