

**PERFECTING EXPLANT STERILIZATION PROCEDURE AND
STUDY THE EFFECT OF GROWTH REGULATORS ON IN-
VITRO SHOOT INITIATION OF ONCIDIUM (*Oncidium
multiflorum*) USING INFLORESCENCE SEGMENTS**

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by

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ABSTRACT

Oncidium orchids (*Oncidium multiflorum*), commonly known as the 'Dancing doll', is one of the most beautiful species of epiphytic orchid that have high economic value in the floriculture industry as a cut flower as well as a potted plant throughout the world. Though the popular method for generating new plants of *Oncidium* is seed germination, getting genetically identical plants is a problem. Plant tissue culture technology is being widely used for large scale plant multiplication of *Oncidium* to cater the demand in floriculture industry. Therefore, inflorescence segment culture was introduced to obtain *invitro* shoots by direct organogenesis. This experiment was conducted to develop an efficient protocol for surface sterilization and shoot initiation using inflorescent segments as explant.

After the removal of bracts around the bud, 5% sodium hypochlorite was used with different times of soaking to select the best surface sterilization method which gave the highest uncontaminated explants. Inflorescence segments, as explants were cultured on Murashige and Skoog (MS) medium fortified with different concentrations of N6-benzyladenine (BA) and α -naphthaleneacetic acid (NAA) in combination to identify the best combination for shoot initiation. Cultures were maintained at $25 \pm 2^\circ \text{C}$ temperature in a culture room.

The experiment was designed with Complete Randomized design with ten replicates and results were analyzed with Minitab® 17.1.0 software. The results shown that the best assembly for surface sterilization which gave the highest number of uncontaminated inflorescence segment explant was 5% Sodium hypochlorite for 15 minutes. Best hormonal combination for shoot initiation was 0.5 mg l^{-1} NAA with 5 mg l^{-1} BA and it was the best combination that shown the increased shoot height. Shoot initiation of *Oncidium multiflorum* using inflorescence explants can be accomplished successfully using above methods of surface sterilization and culture establishment.

Key words: *Oncidium multiflorum*, Inflorescence segments, Shoot initiation, BA, NAA