

***IN VITRO* PROPAGATION OF CHILLI, *Capsicum*
frutescens Linn. BY ORGANOGENESIS**

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ABSTRACT

***IN VITRO* PROPAGATION OF CHILLI, *Capsicum frutescens* Linn. BY ORGANOGENESIS**

Capsicum frutescens Linn. or chilli is an important crop not only for its flavour, but widely used in pharmaceuticals and agriculture industry. Faster propagation techniques for mass multiplication have become crucial in order to meet the high demand for the crops every year. Therefore, *in vitro* propagation techniques is very suitable to use as it requires minimum growing space and high quality of seedling. The objectives of this study are to investigate the rate of germination of seed explant of *Capsicum frutescens* Linn. by determining its grow *in vitro* condition. By direct and indirect methods of sterilization, about 25 vials which each vials contain 5 seeds were planted in incubation room with $25\pm 2^{\circ}\text{C}$ using 16/8 hours photoperiod until the seeds germinated within six weeks. The percentage of germinated seeds were measured in week 3, the seeds sterilization technique shows higher percentage rate of germination than pods sterilization technique which is 82.4% and 49.6% respectively. Morphological observations prove that plantlets that grow from direct sterilization methods are healthier than indirect sterilization methods. After six weeks, the plantlets had been measured by one-way ANOVA. For direct methods and indirect methods, the mean values for number of leaves are 5.52 and 4.12 respectively. For height of stems mean for direct methods and indirect methods are 5.75 cm and 2.96 cm respectively. Mean of direct method for the length of roots and indirect methods are 9.53 cm and 6.34 cm respectively. The significant level, *p* value for number of leaves, height of stems and length of roots are 0.037, 0.000 and 0.004 respectively. Therefore, there is no significant difference for all the parameters used in this study. For the plant in the MS media with hormones of BAP and NAA the roots of the plants rapidly grow in week 3 but it show poor performance of growth after six weeks.