**DEVELOPMENT OF AN ANTHER CULTURE PROTOCOL FOR SELECTED VARIETIES OF CAPSICUM**

**(*Capsicum annuum* L.)**

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**ABSTRACT**

Conventional breeding of capsicum is a time-consuming and a labor-intensive process and this could be overcome by using *in-vitro* methods of haploid plant production. The experiment was conducted to study the response of anther culture protocol for capsicum varieties; ISPN-8 (breeding line), hordi breeding line 300 (inbred line), hordi breeding line 860 (inbred line) and HYW (released by DOA) with the objective of finding the most effective callus induction media in order to enhance plant breeding. The research was designed in a Completely Randomized Design. Three different callus induction media were used with varying concentrations 1 mg/L, 2mg/L and 3mg/L IAA (indole acidic acid) on MS medium to detect the best medium for callus induction using anther culture. To find out the best capsicum variety to practice anther culture, anthers of the above varieties were used in the experiment. In this study, the percentage of callus formation did not show a significant effect. (p> 0.05). The highest percentage of callus formation (91.67%) was obtained in the medium 3.0 mg/L IAA from 860 variety. The lowest percentage of callus formation (13.33 %) was obtained in the medium 2.0 mg/L IAA from hordi breeding line 300 variety. In this study, the number of days taken for callus formation did not show a significant effect. (p> 0.05). The highest number of days taken for callus formation (26 days) was obtained in 3.0 mg/L IAA from ISPN-8 variety. The lowest number of days taken for callus formation (15 days) was obtained in 3.0 mg/L IAA from HYW variety. Significant variations were observed in varietal responses based on different genotypes used. The medium supplemented with 3.0 mg/L IAA was observed to be the most suitable for callus induction in selected varieties of capsicum. This protocol is yet to be improved media wise and variety wise.

***Keywords:*** *anther culture, callus induction, capsicum, IAA*