

**Abstract No: BO-01**

**An efficient culture medium for *in vitro* propagation of *Chrysanthemum* sp. using petals as explants**

V. L. P. Amarasinghe, P. D. D. M. Panapitiya\*, N. D. C. S. Leelarathne and A. I. S. Priyadharshan

Floriculture Research Center, University of Kelaniya, Sri Lanka  
deshikapanapitiya@gmail.com\*

*Chrysanthemum* is a floricultural plant with high demand all over the world. To overcome shortcomings in the supply chain due to the slow rate of propagation and severe susceptibility to virus infections, multiple shoot regeneration using tissue culture has become a successful technique for *Chrysanthemum* propagation. Although different explant types can be used for *in vitro* culturing, the number of explants that can be obtained from a single mother plant is limited. Nevertheless, the use of petals (ray florets) as explants can reduce such restrictions since a single flower/flower bud provides a large number of ray florets at a time. Therefore, the objective of the current study was to find an effective culture medium for *in vitro* propagation of *Chrysanthemum* sp. using petals (ray florets) as explants. The basal MS media supplemented with different concentrations of BAP (Benzyl Amino Purine) (1.0 - 5.0 mg/L) and NAA (Naphthalene Acetic Acid) (0.1 and 0.2 mg/L) were used as the culture media and the growth regulator free MS medium was used as the control. The pH of the media was adjusted to 5.8. Surface sterilized petals of partially bloomed flower buds were cultured in media and maintained at 26±4 °C in the culture room under a 14 h photoperiod with irradiance (20 mol/m<sup>2</sup>/sec) provided by cool-white fluorescent lights. After 60 days, MS medium supplemented with BAP (1.00 mg/L) and NAA (0.10 mg/L) was identified as the most successful medium for shoot regeneration with 08 shoots derived from a single explant with 11 leaves per shoot. Meanwhile, MS medium supplemented with BAP (5.00 mg/L) and NAA (0.10 mg/L) was identified as the best medium for rooting with 04 roots per shoot/callus with a 7.3 cm root length. Further, media containing BAP (3.00 – 5.00 mg/L) and NAA (0.10 and 0.20 mg/L) were recognized as the media composition which can be used for both shoot and root regeneration at the same time. Even though there was a good root development, the shoot development in these media was not notable. Therefore as the conclusion, MS medium supplemented with BAP (1.00 mg/L) and NAA (0.10 mg/L) can be recommended as a successful medium for both shoot initiation and development while MS medium supplemented with BAP (5.00 mg/L) and NAA (0.10 mg/L) can be used as a successful medium for both *in vitro* root initiation and development of *in vitro* petal culturing of *Chrysanthemum*.

**Keywords:** BAP, *Chrysanthemum*, Micropropagation, NAA, Petal culture