

Effect of Propagation Media on Rooting of *Chrysanthemum Morifolium* Stem Cuttings: An alternative Substrate for Propagation Via Stem Cuttings

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ABSTRACT

With the increase in demand for *Chrysanthemum (Chrysanthemum morifolium)* a large number of small scale farmers in Bandarawela area started cultivation of the crop. Availability of an appropriate growing substrate is essential for the production of quality plants. Though top soil is commonly used as nursery medium by most growers, percentage establishment and survival of stem cuttings in the soil medium is very poor. This study investigates the effects of media on rooting of chrysanthemum stem cuttings. The experiment was conducted during *Maha* 2016/17. Apical shoots of about 4-5 cm long with about 5 leaves were used as stem cuttings. Three treatments; sand: top soil: cow dung: partially burnt paddy husk (2:1:1/2:1/2), coir dust, coir dust + sand (1:1) were tested. Top soil was used as the control. Days taken to initiate roots, number of roots, maximum root length, root fresh and dry weight, shoot fresh and dry weight and survival rates were recorded as plant characters. pH, Electrical Conductivity (EC), water holding capacity and moisture content were recorded as media characters. Highest pH (6.86) and lowest EC (0.017) were recorded in soil media. High levels of water holding capacity and moisture content were observed in coir dust media which have both positive and negative effects on root growth. Least shoot to root ratio was recorded in coir dust (1.7) and coir dust+sand (1.23) media. Least number of roots was observed in soil media (12.13) which is significantly lower than other three media. Root length was highest in sand + top soil + cow dung + partially burnt paddy husk media (4.97 cm) while least in top soil media (3.72 cm). Better root performances of those media may be due to high water holding capacity and porosity. Root dry weight is higher in Coir dust + Sand media (5.9g) but the shoot dry weight is lowest. Coir dust and coir dust+sand (1:1) can be used as an alternative media for soil to overcome difficulties in propagation *Chrysanthemum*, poor survival and establishment rates in soil media and ultimately to achieve the expected levels of production.

Key words: Chrysanthemum, Nursery media, Propagation, Stem cuttings

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