Effect of some natural culture media on *in vitro* shootlet proliferation of *Ruscus hypoglossum* L. and *Aspidistra elatior* Blume

(Recived: 25.05.2004; Accepted: 10.06.2004)

Tarek, A.M. Abou-Dahab
Ornamental Horticulture Department, Faculty of Agriculture, Cairo University, Egypt.

ABSTRACT

The effect of some natural media on in vitro shootlets proliferation behaviour was tested for Ruscus hypoglossum and Aspidistra elatior. With respect of Ruscus hypoglossum, the maximum number of shootlets produced per explant was recorded after three times of subculture on half strength MS-medium, but the tallest shootlet length and the greatest number of leaves per shootlet were found when using full strength MS-medium. The highest amounts of chlorophyll-A and carotenoids were observed in shootlet tissues grown on MS- medium of half and quarter strength, respectively. Chlorophyll-B was produced in higher values when using 50 and 100 g/l of wheat medium. Using 50 and 100 g/l of either barley or chickpea medium resulted in the highest amount of indoles and phenols in the shootlet tissues. With respect of Aspidistra elatior, the greatest numbers of shootlets per explant were obtained in case of using full strength MS-medium, while the tallest shootlets were found when using 100 g/l of either chickpea or barley medium. Culturing on full strength MS-medium gave the highest values of chlorophyll-A and carotenoids, but culturing on 50 g/l faba bean medium induced the formation of chlorophyll-B and phenols in maximum amounts. Culturing on 150 g/l chickpea medium resulted in the highest values of total indoles. In conclusion, it is useful to use the same natural culture media for improving in vitro shootlet, proliferation behaviour of Ruscus hypoglossium and Aspidistra elatior.

Keywords: *Natural media, in vitro proliferation, Ruscus hypoglossum, Aspidistra elatior.*

INTRODUCTION

The success of tissue culture in shootlet proliferation of the ornamental plants is greatly influenced by the culture media used. The nutrient medium has two major functions; the first is to supply the basic nutritional ingredient for continued growth of isolated explants and subsequent propagules.

The second function is to direct growth and development through hormonal control (George and Sherrington, 1984). MS medium (Murashige and Skoog, 1962) is a common medium used in plant tissue culture for shootlet proliferation, so it has been used by many workers such as Agrawal *et al.*, (1992) in *Vanilla walkeriae*, Pereira-Pinto *et al.*, (1996) in *Kielmeyera coriacea*, Torres and Mogollon (1997) in *Cattleya lueddemanniona*, Karhu (1997) in *Lonicera caerulea* and Sakr *et al.*, (1999) in *Yucca elephantipes*.

To reduce the high expenses of the tissue culture technique, the MS medium could be substituted by some natural, cheap and easily