

EFFECT OF SOME MUTAGENS ON GROWTH OF *EPIPREMNUM PINNATUM*"*E. AUREUM*" BUNT PLANTS.

BY

Hanan M.A. Youssef

Ornamental Plants Research Department, Hort. Res. Ins. Agric. Res Center.

ABSTRACT

This investigation was carried out during 2005/2006 and 2006/2007 seasons in the glass greenhouse of the Horticultural Research Institute, Giza, Egypt to study the possibility of inducing some variation in growth of *Epipremnum pinnatum* "*E. aureum*". One node cutting were subjected to sprayed with sodium azide and colchicine at 0.00, 0.002, 0.004 & 0.008 ppm, so irradiation by microwave rays at power 0.00, 1, 2 & 3 (0.00, 95, 195, & 280 watt) for 0, 1, 2 & 3 mint to induced some variation in growth, results showed that:

Untreated plant (control) gave the best stem diameter and number of roots. Sprayed sodium azide at 0.004 ppm leading to increased number of shoots and roots while spraying it at 0.008 ppm significantly increased number of leaves, leaf area, roots length and vegetative fresh & dry weights. While using colchicine at 0.002 ppm significantly increased dry weights of vegetative growth and roots. Meanwhile spraying colchicine at 0.004 ppm concentration caused a significantly increased in stem diameter, fresh weight of roots, chlorophyll a,b and carotenoids.

Treated with microwave at power 1 for 1 mint significantly increased leaf area and root length. While irradiation with microwave at power 2 for 1 mint was significantly increased number of roots, but using microwave rays for 2 mint significantly reduced fresh and dry weight of roots, while for 3 mint significantly increased number of shoots. Microwave at power 3 for 1 mint significantly increased chlorophyll and carotenoids but reducing fresh and dry weight of roots, while treated for 2 mint induced significantly increased plant height, number of leaves and vegetative fresh & dry weights. Sodium azide more effecting from colchicines in induced variation on growth of *Epipremnum pinnatum* "*E. aureum*" while microwave give more influenced in induced variation from sodium azide and colchicine. Electrophoretic analysis indicated that colchicine and sodium azide increased some band of protein, while microwave induced significantly increased in genetic variation of total bands of protein (16) compared with control (13), sodium azide (14) and colchicines (13).

INTRODUCTION

Epipremnum pinnatum plants, currently known as "*E. aureum*" is a very important ornamental foliage plant, used for indoor decoration for its beautiful coloration of leaves and good growth. The demand of this plant has been increased greatly due to the special kind of beauty and wide range of purposes can be used for in hangs as well as climbing on stick and in baskets.

Variations or mutations may be occurred naturally or induced either chemically by chemical mutagens or physically by irradiation electromagnetic waves microwave it was affirmed that subjecting the plants to various concentrations of sodium azide or colchicine for different duration treatments exhibited a pronounced fluctuation.