Physiological Studies on Propagation of Some Medicinal Plants *In Vitro*

By

Yasser Abd El-Fattah Abd El-Aty Ghattas

B.Sc. Agric. Sci. (Hort. Dept.), Fac. Agric.,
Zagazig University , Benha Branch (2002)

THESIS

Submitted in partial fulfillment of The Requirements

for the Degree

of

MASTER OF SCIENCE

In

Horticulture
(Floriculture)

Department of Horticulture

Faculty of Agriculture, Moshtohor

Benha University

2007

Abstract

Name : **Yasser Abd El-Fattah Abd El-Aty Ghattas**

Title: **Physiological Studies on Propagation of Some Medicinal Plants *In Vitro***

ABSTRACT

Explants (shoot tip and one node cuttings) for marjoram while leaf discs, apical bud segments and corm pieces for meadow saffron were prepared and sterilized.

Different explants were cultured on different medium types, different antioxidant treatments and preculture cold treatments as well as different additives for both Majorana and Meadow saffron were evaluated during establishment stage. However, BAP concentration, 2,4-D concentration and different hormonal balance were tested during indirect regeneration of Meadow saffron. Cytokinin type and BAP concentration were studied on marjoram only during proliferation stage. Moreover, medium strength, GA_3 concentration, auxin type and different concentrations of IBA were evaluated on marjoram only during rooting stage.

It is found that culturing of Marjoram shoot tips and subjected to pre-treated with antioxidant solution as cold on MS medium supplemented with PVP and Adenine sulphate improved establishment stage. Also, adding 2.0 mg/L BAP maximized proliferation. In addition, using half MS strength medium supplemented with 4.0 mg/L GA_3 maximized shoot elongation beside culturing the explant in medium contained 2.0 mg/L IBA enhanced rooting. On the other hand, culturing of the apical bud segments of Meadow saffron pretreated with same treatments of marjoram on MS medium supplemented with either 6.0 mg/L 2,4-D or 4.0 mg/L BAP enhanced the highest callus production. Culturing of produced mature callus on the medium contained yeast extract maximized callus development culturing of the developed callus on medium with hormonal balance 2.0 mg/L BAP plus 1.0 mg/L IBA maximized somatic embryos formation.