Faculty of Science
Ain Shams University

Physiological and Phytochemical Studies on Kaff Maryum (*Anastatica hierochuntica* L.) Plant

ATHESIS

Submitted for the degree of Master of Science as a Partial Fulfillment for requirements of the Master of Science Botany (Plant Physiology)

By

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B. Sc. In Science (Botany-Chemistry)
(2005)

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Presented to

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Ain Shams University

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M. Sc. Thesis

Title of Thesis: Physiological and Phytochemical Studies on Kaff Maryum (*Anastatica hierochuntica* L.) Plant

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Walaa Soliman Madboly

Abstract

Title of the thesis: Physiological and phytochemical studies on kaff m maryum (*Anastatica hierochuntica* L.) plant

Degree: Master in botany (plant physiology)

Name of the student :Walaa Soliman Madboly

In present work the effect of red sea water ,mannitol and their interaction on kaff maryum plant was studied .The study included two parts ;the first was the physiological results and the second the phytochemical results.

The physiological results

The percentage of germination and shoot length were reduced while the root length, fresh weight, number of branches and leaves and leave area were mostly increased in response to salinity especially at the low concentration. Soluble sugars were at high level in the low concentration while the high concentration accumulated polysaccharide. The antioxidant compounds showed high levels in most treatments. Also the antioxidant activity increased by increasing the total phenolics and flavonoid contents. There are some qualitative changes in the protein profile

which included the disappearance and appearance of *de novo* synthysized bands.

The phytochemical results

Five Compounds were isolated for the first time from *A. hierochuntica*. The extracts of control **C**, include flavonoids (**1-12**) and the five treatments (**S1**, **S2**, **M**, **MS1** and **MS2**) were subjected to HPLC analysis as well as CO-PC with authentic samples using two dimension paper chromatography (2D-PC). Twelve flavonoid compounds were isolated and identified from the control extract of *A. hierochuntica* (vegetative stage).

Keywords: *Anastatica hierochuntica* – Salinity – Antioxidant – Physiological - Phytochemical

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