بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

MONA MAGHRABY

EFFECT OF COMPOST FERTILIZATION RATES ON GROWTH, YIELD AND SOME ACTIVE CONSTITUENTS OF TWO VARIETIES OF CALENDULA OFFICINALIS

Submitted By

Hesham Roshdey Abdelfatah Fatta

B.Sc. of Agricultural Sciences (Desert Land Reclamation & Cultivation Technology), Faculty of Agriculture, Cairo University, 2007

A Thesis Submitted in Partial Fulfillment
Of
The Requirement for the Master Degree
In
Environmental Sciences

Department of Environmental Agricultural Sciences
Institute of Environmental Studies and Research
Ain Shams University

2021

APPROVAL SHEET

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بسم الله الرحمن الرحيم

قالوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم الحكيم

صدق الله العظيم

سورة البقرة الآية: ٣٢

Acknowledgments

First of all, deepest, greatest and most sincere thanks are always extended to "ALLAH" the most merciful and clement God.

Secondly, I would like to express my sincere gratitude to my supervisor Prof. Dr. Abdelaziz Mohamed Hosni for his constant support and encouragement during this master's degree program. This work would not have been possible without his guidance. It was an honor and a privilege to be a part of his research group.

Next, I want to thank Dr. Mohammed Hewidy for his support and help in completing this work. I would like to admit to the fact that his contribution was extremely helpful in teaching me basics of scientific research. He also assisted in collecting a lot of experimental data, field work and statistical analyses.

In addition, I would like to express my gratitude to Dr. Mahmoud Hesham Selim who provided me with the necessary support for assisting to complete my master's degree.

Here, I would never forget support of both Dr. Haney Hassan and Dr. Yehia Hesham. Moreover, I would like to offer my deepest thanks and gratitude to all my brothers Abd-elfatah, Yehia, Nahed, and Gamal.

Last but not least, my deepest gratitude is offered to my family, especially my wife, for all the care and moral support provided by her. This work could not have been concluded with high success without her patience and understanding.

Abstract

Hesham Roshdey Abdelfatah Fatta. Effect of Compost Fertilization Rates on Growth, Yield and Some Active Constituents of Two Varieties of *Calendula officinalis*. Unpublished M.Sc. Thesis, Department of Environmental Agricultural Sciences, Institute of Environmental Studies and Research, Ain Shams University, 2020.

This research study was carried out in pot experiments during the two successive seasons 2016-2017 and 2017-2018 at the Applied Research Center for Medicinal Plants, National Organization for Drug Control and Research (NODCAR) at Kafer El- Gable, Giza.

The main objective of this study was to investigate the effect of using compost, as an organic amendment, to replace some of the mineral fertilizers normally utilized, thus reducing the harmful effects of the excess of fertilizers as an environmental hazard and health problem.

Two types of fertilizers were applied, namely compost as organic, and NPK as mineral fertilizers creating six treatments: (1) 100% Organic (Org), (2) 100% Mineral (Min), (3) 75% Min + 25% Org, (4) 50% Min +50% Org, (5) 25% Min +75% Org and (6) without any fertilizers (control).They were used on two varieties of *Calendula officinalis* namely `Costa Orange`and `Costa Yellow`.

The results indicated that the highest values for the vegetative growth parameters, i.e. plant height (cm), flower diameter (cm), number of flower/ plant, above-ground fresh and dry weight/ plant(g), were obtained by the 100% Mineral fertilization treatment in the Yellow variety in both seasons respectively.

Meanwhile, the same trend of results followed suite for the active constituent, i.e. total carbohydrate content, total polyphenols and total flavonoids. Photosynthetic pigments like chlorophyll a, chlorophyll b, carotenoids content and oil yield, oil constituents responded in the same way when assessed in the Orange cultivar of *Calendula officinalis* in both seasons.

Keywords: Pot marigold, *Calendula officinalis*, Var. Costa Yellow and Orange, Compost, NPK Fertilization, Flowering, Flavonoids, Polyphenol, Oil constituents.

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