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جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

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بالرسالة صفحات

لم ترد بالأصـــل

شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة

HEAVY METAL CONTENTS OF STRAWBERRY FRUITS GROWN UNDER DIFFERENT ENVIRONMENTAL CONDITIONS

BY

MERVAT GALAL ABD EL-AZIZ AHMED

B.Sc. Agric . (Horticulture), Ain Shams Univ., 1991

A thesis submitted in partial fulfillment of

the requirements for the degree of

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in

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(Vegetable Crops)

Department of Horticulture

Faculty of Agriculture

Ain Shams University

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APPROVAL SHEET

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This thesis for M.Sc. degree has been approved by:

Prof. Dr. Mohmed Abd El-Latief El-Shall .....

Prof. of Vegetable Crops, Faculty of Agriculture, Alexandria University.

Prof. Dr. Ibrahim Ibrahim El-Oksh .....

Prof. of Vegetable Crops, Faculty of Agriculture, Ain Shams University.

Prof. Dr. Khalifa Attia Okasha .....

Prof. of Horticulture, Faculty of Agriculture, Ain Shams University (Supervisor).

Date of examination 10/ 3 /2001

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MERVAT GALAL ABD EL-AZIZ AHMED

B.Sc. Agric. (Horticulture), Ain Shams Univ., 1991

Under Supervision of :

Prof. Dr. Khalifa Attia Okasha.

Prof. of Horticulture, Faculty of Agriculture, Ain Shams University.

Dr. Mohamed Emam Ragab.

Associate Prof. of Vegetable Crops, Faculty of Agriculture, Ain Shams University

Dr. Amal Anwar Moustafa El- Shimi.

Researcher, Potato and Vegetatively Propagated Vegetables Department , Horticulture Research Institute, Agriculture Research Center.

ABSTRACT

Mervat Galal Abd El-Aziz. Heavy metal contents of strawberry fruits grown under different environmental conditions. Unpublished Master of Agriculture Science Thesis, Ain Shams University, Faculty of Agriculture, Horticulture Department 2001.

This study was carried out to determine the concentration of heavy metals, viz. Pb, Cd, Ni, Fe, Cu, Mn and Zn in Selva and Chandler strawberry cultivars grown in heavy clay soil at El-Deer, Toukh, kaluobia governorate at distance of 0-1 0, 20-25, 40-45 and 200 meter from the driving way with an average daily traffic density 17712 vehicles. The same cultivars were planted in the second experiment under low tunnels in sandy soil at South Tahrir, Beheira governorate as a comparison for non- contaminated environment. Results indicated that the concentrations of heavy metals in fruits were negatively correlated with increasing the distance from the traffic road and positively correlated with their concentration in leaves. Low levels of Cd, Ni,Fe, Mn and Zn and high levels of Pb and Cu were found in fruits and leaves of Selva as compared with Chandler. Pb, Cd and Cu content were lowest at full color stage. While, the highest Fe and Mn contents were found at full color stage. However, Ni and Zn content in fruits were not affected by coloring stage.

Results also indicated that planting strawberry at distances far from the driving way affected positively fruit quality, Viz., ascorbic acid content, total soluble solids, total and reducing sugars as well as dry matter content and fruit firmness. While, total titratable acidity was not affected by distance from the road. With respect to the second experiment, planting strawberry at non-contaminated environment under low tunnels prevented lead and

cadmium accumulation in fruits and affected positively fruit quality. It could be concluded that strawberry plants could be grown safety after 25 m from the driving way without heavy metals contamination from cars. While, it is preferable to establish strawberry plantations in isolated areas especially for export.

Key words: Strawberry, Heavy metals contamination, Air pollution, Lead, Cadmium, Fruit quality.

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