# دراسات على انتاج الخضروات فى البيئات البديلة بالزراعات الحضرية

رسالة مقدمة من

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**(النظم الزراعية المتطورة للمناطق الجافة)**

**معهد الدراسات العليا والبحوث للزراعة فى المناطق القاحلة**
**كلية الزراعـــة**

**جامعة عين شمس**

**2015**

**جامعة عين شمس**
**كلية الزراعة**

**رسالة دكتوراة**

**أسم الطالبـــــة: دينا محمد سلامه أحمد**

# عنوان الرسالة: دراسات على إنتاج الخضروات فى البيئات البديلة بالزراعات الحضرية

**اسم الدرجـــة: دكتور الفلسفة في العلوم الزراعية (النظم الزراعية المتطورة للمناطق الجافة)**

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**تاريخ التسجيل** 17/ 10 /2011

**الدراسات العليا**

**ختم الإجازة**

**أجيزت الرسالة بتاريخ**
**9 /4/** 2015

**موافقة مجلس الكلية**
/ / 2015

**موافقة الجامعة**
/ / 2015

# STUDIES ON PRODUCTION OF VEGETABLES IN SUBSTITUTE MEDIA IN URBAN AGRICULTURE

**By**


## DINA MOHAMED SALAMA AHMED

B.Sc. Agric. Sc. (Vegetable), Cairo University, 2006

M.Sc. Agric. Sc. (Agriculture in Desert), Ain Shams University, 2010


**A Thesis Submitted in Partial Fulfillment**

**of**

**the requirements for the degree of**

## DOCTOR OF PHILOSOPHY

**in**

## Agricultural Science
## (Advanced Agriculture Systems for Arid Land)


**Arid Land Agricultural Graduate Studies and Research Institute**
**Faculty of Agriculture**
**Ain Shams University**


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**2015**

# ABSTRACT

**Dina Mohamed Salama Ahmed: Studies on vegetables productionin substitute media in urban agriculture.Unpublished Ph.D. Thesis, Arid Land Agricultural Graduate Studies and Research Institute, Faculty of Agriculture, Ain Shams University, 2015.**

This study was carried out during 2011, 2012 and 2013 for producing vegetable sprouts (Turnip, red radish and onion) and vegetable crops (Turnip, red radish, green onion, jews mallow and snap bean) using four growing media in wooden plot during winter and summer seasons. The wooden plot located in the kitchen experimental farm module in the Vegetables Experimental Farm of the Faculty of Agriculture, Ain Shams University, to study the effect of growing media on growth, yield characters and nutritional value of vegetable sprouts and vegetable crop products.

Turnip and red radish sprouts at cotyledon stage grown in clay and clay mixture media recorded higher sprout yield with good source of protein, fiber, phenols, flavonoids and vitamin C in addition to decrease lipid and sugars content. Three weeks old onion sprouts grown in peatmose + vermiculate medium were rapid in growth with taller sprout length, longer white base length, taller sprout green tops with higher sprout yield and higher value of carbohydrates, energy, lipid, flavonoids , anthocyanin and potassium.

The best plant growth and yield characters of vegetable crop products (Turnip, red radish, green onion and snap bean) significantly increased in plants produced in peatmoss + vermiculate. On the contrary, jews mallow plants grown in clay medium produced the highest plant growth and yield. Chemical content of vegetable crop products varied depending on the type of plant and medium used. Also, vegetation for crops in different growing media was effective in

decreasing the heat refraction for plants and soil as compared to air temperature at all growth stages.

It can be generally concluded that the clay media can be recommended for producing sprouts (turnip and red radish) and jews mallow plants, while peatmoss + vermiculate medium can be recommended for producing onion bud sprouts and vegetable crop products (Turnip and red radish roots, green onion plant and snap bean pods) in the kitchen garden.

**Keywords**: Sprouts, Turnip, Red radish, Green onion, Jews mallow, Snap bean, Growing media, Nutritional value.

## ACKNOWLEDGEMENT

Praise and thanks be to **ALLAH**, the most merciful for directing me to the right way and provides me all I have.

Very special thanks to **Prof. Dr. Mamdouh Mohamed Fawzy Abdallah,** Professor Emeritus of Vegetable, Horticulture Dept., Faculty of Agriculture, Ain Shams University, for his supervision, reviewing the manuscript and fruitful discussion during this work. He was an excellent supervisor, he always kept eyes on the progress of my work, gave me stimulating suggestions and he was at all times available when I needed his help and advice. It a great honor to work under his supervision.

I would like to express my deepest gratitude to **Prof. Dr. Usama Ahmed Ali El- Behairy,** Professor of Vegetable, Horticulture Dept., Faculty of Agriculture, Ain Shams University, for his supervision, reviewing the manuscript, for the patient guidance, encouragement and advice, he has provided throughout my time as his student. I have been extremely lucky to have a supervisor who cared so much about my work, and who responded to my questions and queries so promptly.

I am indebted and sincere thanks to **Prof. Dr. Mohamed Reda Hussein Shafeek,** Research Professor Emeritus of Vegetable, Vegetable Research Dept., National Research Center, for his supervision, reviewing the manuscript, for his constructive guidance and help during the preparation of this work.

My deeply thanks to **Prof. Dr. Hamed Maher El-Abagi,** Research Professor Emeritus of Vegetable, Vegetable Research Dept., National Research Center, for his kind encouragement and support me during this work.

I am grateful to **Prof. Dr. Magda Hafez** Research Professor Emeritus of Vegetable, Vegetable Research Dept., National Research Center, for her kind encouragement and support me during this work.

Thanks are due to all members of Arid land Agricultural graduate studies and Research Institute and Horticulture Dept., Faculty of Agriculture, Ain Shams University. And also, Vegetable Research Dept., National Research Center, for their help and cooperation.

By all means and words in the world, summarize as my true love to all my family especially my parents **Prof. Dr. Mohamed Salama Ahmed** Professor Researcher, Botany Dept., National Research Center and **Prof. Dr. Fayza Mahmoud El-wakeel** Professor of Islamic and Coptic monuments, Faculty of Archaeology, Cairo University for their great support and enhancing me throughout my life.

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