بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــســـم ﴾

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 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

PRODUCTION OF SWEET BASIL (*Ocimum basilicum* L.) IN THE NEW RECLAIMED LANDS UNDER DIFFERENT LEVELS OF BIOFERTILIZERS AND PLANT DENSITIES

BY

REHAM MOHAMED SABRY ABD EL-RAOUF
B. Sc. Agric., (Hort.), Cairo Univ., 1993

A thesis submitted in partial fulfillment of the requirements for the degree of

MASTER Of SCIENCE

in
Agricultural Sciences
(Ornamental Plants)

Department of Horticulture
Faculty of Agriculture
Ain Shams University
2001

APPROVAL SHEET

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Date of examination: 3/9/**2001**

SUPERVISION SHEET

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ABSTRACT

Reham Mohamed Sabry Abd El- Raouf. Production of sweet basil (*Ocimum basilicum* L.) in the new reclaimed land under different levels of biofertilizers and plant densities. Unpublished Master of Agricultural Science Thesis, Ain Shams University, Faculty of Agriculture, Department of Horticulture, 2001.

The response of sweet basil (*Ocimum basilicum* L.) to different organic fertilization and plant density in the new reclaimed lands was studied at the experimental farm of Sekem Company of Biodynamic Agriculture located at 21 km. on the Cairo El-Ismailia desert road during the two successive seasons of 1997 and 1998. Four organic fertiiization rates (15,25,35 and 45 m^3/fed) in the first season and six rates (15,25,35,45,55 and 65 m^3/fed) in the second season were applied in combination with four plant spacing (15,25,35 and 45 cm).

Increasing the organic fertilization rate (as compost) significantly increased the growth characters of basil plant i.e. plant height, number of branches, herb fresh and dry weights in addition to oil content /plant. The best fertilization rate was 45 m^3/fed in the first season and 55 m^3/fed in the second season for fresh and dry weights of basil herb. The hightest oil content was obtained with the rate of 35 m^3/fed in the first season and 45 m^3/fed in the second season. Also, organic fertilization had a significant effect on sweet basil yield / feddan where the application of 45 m^3/fed surpassed that of 15 m^3/fed for both fresh herb and dry leaves yields by 66 and 56 % in the first season and by 35 and 37 % in the second season, respectively. The highest values of oil yield/fed were obtained from organic fertilization rates of 35 and 45 m^3/fed which increased the oil yield by 38 and 33 % in the first and second seasons, respectively.

Widening plant spacing significantly increased number of branches, herb fresh and dry weights in addition to oil content/plant, yet decreased plant height. The maximum values of fresh herb, dry leaves and oil yields/feddan were obtained from cultivation at plant spacing of 15 cm in both seasons which surpassed that of 45 cm by 16, 21, 15 % and 21, 17, 19 % in the first and second seasons, respectively.

As for the effects of the interaction between organic fertilization levels and plant spacing, the maximum values of oil content/plant and oil yield/fed were obtained from plants grown at 45 cm apart and fertilized at either 35 or 45 m^3/fed.

As for the effect of different harvest cuts, the highest values of fresh herb, dry leaves and oil yields were obtained from the third and second cuts in first and second seasons, respectively.

GLC analysis of essential oil showed that linalool and eugenol are the two main constituents in all treatments under study. Whereas, the oil composition was not affected at all by plant spacing it was slightly influenced by organic fertilization where the rate of 35 m^3/fed produced the highest percentage of eugenol in both seasons. Yet, organic fertilization treatments had no clear trend on the percentage of linalool.

Key words: Sweet basil, *Ocimum basilicum* L., Organic fertilization, Plant spacing, Reclaimed lands.

ACKNOWLEDGMENTS

I wish to express my deepest gratitude and appreciation to Pro. Dr. **Shafik Ahmed El-Gendy,** Professor of Ornamental Horticulture, Fac. of Agric., Ain Shams Univ. for valuable guidance, great help, time offered and constructive criticism throughout the course of this study.

My deepest gratitude are also offered to Prof. Dr. **Salah Sayed Ahmed,** Professor and head of cultivation and production of Medicinal and Aromatic plants department, National Research Center, for his supervision, suggesting the problem and valuable help during the course of this investigation.

Full praise and hearty thanks are offered to Dr. **Abdelaziz Mohamed Hosni,** Associate Professor of Ornamental Horticulture, Fac. of Agric., Ain Shams Univ. for his supervision, valuable advice and many helpful suggestions during the progress of this work and in the preparation of this manuscript.

Sincere thanks and grateful appreciation are extended to Prof. Dr. **ElSayed Abou Elfotowh Omer** Professor of Medicinal plants, National Research Center for valuable advice and continuoues help throughout the progress of this investigation.

I would like to give thanks and appreciation to the **Sekem Company** for providing me with all the facilities required that helps in carrying out the field experiments of this study.

Last but not least, I offer my deep thanks to all the members of my labratory, family and friends for their infinite patience, support and encouragement.