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EFFECT OF ORGANIC AND BIO-FERTILIZATION ON GROWTH AND PRODUCTIVITY OF CANTALOUPE

BY

HALA HASSAN ABO EL-NOUR

B.Sc.Agric.Sc. (Horticulture), Ain Shams University, 1995

M.Sc.Agric.Sc. (Horticulture), Ain Shams University, 2003

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This thesis for Ph.D. degree has been approved by:

Prof. Dr. Shamel Ahmad Shanan

Prof. Emeritus of Vegetables Crops, Faculty of Agriculture El-Azhar
University

Prof. Dr. Ibrahim Ibrahim El-Oksh

Prof. Emeritus of Vegetables Crops, Faculty of Agriculture Ain Shams
University

Prof. Dr. Mohamed Hashem El-Deeb

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

Date of Examination: 22 / 12 / 2008

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HALA HASSAN ABO EL-NOUR

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Under the supervision of

Prof. Dr. Mohamed Hashem El-Deeb

Prof. of Vegetable Crops, Department of Horticulture,
Faculty of Agric., Ain Shams University (Principal Supervisor)

Dr. Salah El-Dein Mahmoud El-Miniawy

Associate prof. of Vegetable Crops, Department of Horticulture,
Faculty of Agric., Ain Shams University

Prof. Dr. Ibrahim Zaki Abd El-Whab El-Shimi

Prof. of Vegetable Crops, Horticulture Research Institute,
Agricultural Research Center

ABSTRACT

Hala Hassan Abo El-Nour Effect of Organic and Bio-fertilization on Growth and Productivity of Cantaloupe Unpublished Ph.D. Thesis, Department of Horticulture, Faculty of Agriculture, Ain Shams University 2009

This investigation was carried out in sandy loam soil at the experimental farm of El-Kassasien Horticulture Research station, Ismaelia Governorate, during the two successive winter seasons 2005 and 2006, to study the effect of different types and rates of organic and bio-fertilizers on plant growth, yield component and yield quality. Results revealed that the highest vegetative growth, i.e., plant height, number of leaves and branches, leaf area as well as fresh and dry weight of cantaloupe plant were recorded by using chicken manure at different rates plus bio-fertilizer followed by cattle manure plus bio-fertilizer treatments and the lowest values were recorded by compost treatment at different rates plus bio-fertilizer.

Concerning plant chemical contents, i.e., N, P, K and chlorophyll as well as fruit chemical contents, i.e., T.SS, nitrate and heavy metals Cd and Pb the results showed that, in general N, P and chlorophyll concentrations in leaves as well as nitrate content in fruits were higher by using chicken manure at different rates plus using mixture of Biovit plus Biomagic than the other treatments. The plant supplied with cattle manure at different rates recorded the highest values of fruit Cd content. Furthermore, the K concentration in leaves as well as fruit T.SS content were significantly increased by using cattle manure at different rates and mixture of Biovit plus Biomagic. On the other hand, concentration of Pb in fruit was higher by using compost treatment at different rates which gave the lowest values. Cantaloupe plants which were fertilized with chicken manure at

different rates plus using mixture of Biovit plus Biomagic produced the highest fruit yield components, i.e., early, marketable and total yield, as well as fruit characters as compared with the other tested treatments in this study. Concerning root rhizosphere of *Fusarium spp.* populations, results showed that counts of *Fusarium spp.*/1g dry soil were higher in plots treated by low rates of organic fertilizers meanwhile the lowest *Fusarium spp.* was recorded with high rates of organic fertilizers plus using mixture of Biovit plus Biomagic.

Keywords:

Cantaloupe, Muskmelon (*Cucumis melo* var *reticulatus*), Cattle manure, Chicken manure, Compost, Bio-fertilizers, plant growth, yield quality.

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