

**PEPPER RESPONSE TO ORGANIC AND BIO-  
FERTILIZERS UNDER PLASTIC HOUSE  
CONDITIONS**

**By**

**SAUDI MOHAMMED MOHAMMED**

**B.Sc. Agric. Sci. (General Division), Fac. Agric., Minia Univ., 2002**

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APPROVAL SHEET

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**Title of Thesis:** Pepper Response to Organic and Bio- Fertilizers under Plastic House Conditions

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### ABSTRACT

Two experiments were carried out during two successive seasons of 2006-2007 and 2007-2008 at Kaha Experimental Station, Kaluobia Governorate, Horticultural Research Institute on pepper plants cv Sonar, F1.

The experiment was carried out to evaluate between 2 m<sup>3</sup> /540 m<sup>2</sup> chicken manure and 1, 2 , 3 m<sup>3</sup>/540 m<sup>2</sup> of compost with or without effective micro organisms and Enciabein . vegetative growth parameters, early and total yields ,fruit physical properties and fruit chemical properties were taken place in this experiment.

Applying 3m<sup>3</sup> of compost /540 m<sup>2</sup> gave significantly the highest values of plant height, number of branches and leaves, total leaf area, fresh and dry weight of leaves and stem per plant as well as early and total yield/ m<sup>2</sup>, fruit weight and ascorbic acid (Vit. C).

No significant effect was determined by organic fertilizers on plant height in the second sample of the first season and in the first and second samples in the second season as well as number of branches in the second sample in the second season, weight of early yield, total fruits number in the second season, dry matter percentage, flesh thickness , and T.S.S of fruit in both seasons.

Application of EM significantly gave the highest values of vegetative growth characters, which lead to increase early and total yield as well fruit quality while, Enciabein effect came to the second order concerning those cherecteristics in both seasons.

The highest total yields of fruits were obtained with application the combined of 3 m<sup>3</sup> compost with EM followed by 2 m<sup>3</sup> of compost plus EM .the increment were 98% and 73%, respectively in the first season and 67% and 50%, respectively in the second seasons as comparing with applying 2 m<sup>3</sup> chicken manure alone.

Inoculation organic fertilizers (chicken manures or compost at different levels) with EM reduced nitrate accumulation in pepper fruits.

**Key words:** pepper plants ,organic fertilizers, effective microorganisms, slow release fertilizer ( Enciabein), chicken manure

## DEDICATION

*I dedicate this work to whom my heart felt thanks; to my parents, my wife, my daughter Rawan and my son Abd El-Rahman for their patience and help, as well as to my brothers for all the support they lovely offered along the period of my post graduation.*

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الدرجة: ماجستير

عنوان الرسالة: استجابة الفلفل للتسميد العضوي والحيوي في الزراعات المحمية

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### المستخلص العربي

الهدف الرئيسى لهذا البحث دراسة تأثير استخدام الأسمدة العضوية مثل سماد مخلفات الدواجن بمعدل ٢م<sup>٣</sup> والكمبوست بمعدل ١ ، ٢ ، ٣ م<sup>٣</sup> / للصبوبة وأيضاً عدم الإضافة أو إضافة السماد الحيوي والسماد النتروجين بطيء التحلل يوفافورمالدهيد (أنسيابين) على صفات النمو الخضري (بعد ٧٥ و ١٥٠ يوم من الشتل) والمحصول المبكر والكلية / م<sup>٢</sup> وصفات الثمرة ومحتوياتها من المادة الصلبة الذائبة وحمض الاسكوربيك وتراكم النترات . ولهذا الغرض أجريت تجربتان حقليتان خلال موسمي الزراعة ٢٠٠٦-٢٠٠٧ و ٢٠٠٧-٢٠٠٨ في محطة التجارب الزراعية بقها بمحافظة القليوبية على نبات الفلفل (صنف سونار).

استعمال ٣م<sup>٣</sup> كمبوست ادى زيادة معنوية وأعلى القيم لطول النبات وعدد الفروع وعدد الأوراق ومساحة الأوراق الكلية والوزن الطازج والجاف للأوراق والساق للنبات والمحصول المبكر والكلية ومتوسط وزن الثمرة وفيتامين ج.

لايوجد تأثير معنوي للاسمدة العضوية على طول النبات العينة الثانية في الموسم الأول و للعينة الأولى والثانية في الموسم الثاني وعدد الفروع للعينة الثانية في الموسم الثاني ووزن المحصول المبكر وعدد الثمار للمحصول الكلية / م<sup>٢</sup> في الموسم الثاني وأيضاً على النسبة المئوية للمادة الجافة والمادة الصلبة الذائبة في وسمك اللحم للثمار في الموسمين.

إضافة التسميد الحيوى EM له تأثير معنوى وأعطى أعلى القيم بليه أنسيابين على كل صفات النمو الخضري والمحصول الكلية والمبكر ونوعية الثمار في الموسمين.

أعلى محصول كلي حصل عليه باستعمال ٣م<sup>٣</sup> كمبوست مع EM بليه ٢م<sup>٣</sup> كمبوست مع EM في الموسمين مع زيادة بنسبة ٩٨% و ٧٣% في الموسم الأول و ٦٧% ، ٥٠% في الموسم الثاني مقارنة باستعمال ٢م<sup>٣</sup> سماد دواجن بمفرده.

إضافة التسميد الحيوى EM لسماد الدواجن اولللمعدلات المختلفة من الكمبوست خفض تراكم النترات في ثمار الفلفل.

**الكلمات الدالة:** الفلفل، الأسمدة العضوية ، الكائنات الدقيقة النافعة ، الأسمدة البطيئة التحلل ، سماد الدواجن

# استجابة الفلفل للتسميد العضوي والحيوي في الزراعات المحمية

رسالة ماجستير  
في العلوم الزراعية  
(الخضر)

مقدمة من

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بكالوريوس في العلوم الزراعية (شعبة عامة) - كلية الزراعة - جامعة المنيا، ٢٠٠٢

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للحصول على درجة

ماجستير الخضر

في

العلوم الزراعية  
(الخضر)

قسم الخضر  
كلية الزراعة  
جامعة القاهرة  
مصر

٢٠١١

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