

RESPONSE OF SOME STRAWBERRY CULTIVARS TO IRON FOLIAR SPRAY

By

DOAA MAHMOUD AHMED YOUSSEF

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

Dr. El-Sayed Ahmed Ahmed Tartoura

Prof. of vegetable crops, Faculty of Agriculture, El-Mansoura
University

Dr. Usama Ahmad El-Beairy

Prof. of vegetable crops, Faculty of Agriculture, Ain Shams
University

Dr. Salah El-Deen Hassan El-Miniawy

Associate Prof. of vegetable crops, Faculty of Agriculture, Ain
Shams University

Dr. Mohamed Emam Ragab

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

Date of Examination: 6 / 9 / 2011

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DOAA MAHMOUD AHMED YOUSSEF

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

Under the supervision of:

Dr. Mohamed Emam Ragab

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

Dr. Salah El-Deen Hassan El-Miniawy

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

Dr. Adel Abd El-Khalk El-Sayed

Research Prof. of Plant Nutrition, Department of Fertilization
Technology, National Research Center

استجابة بعض أصناف الفراولة للرش بالحديد

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دعاء محمود أحمد يوسف

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للحصول على
درجة الماجستير في العلوم الزراعية
(خضر)

وقد تمت مناقشة الرسالة والموافقة عليها

اللجنة:

د. السيد أحمد أحمد طرطورة

أستاذ الخضر ، كلية الزراعة ، جامعة المنصورة

د. أسامة أحمد البحيري

أستاذ الخضر ، كلية الزراعة ، جامعة عين شمس

د. صلاح الدين المنياوى

أستاذ الخضر المساعد ، كلية الزراعة ، جامعة عين شمس

د. محمد إمام رجب

أستاذ الخضر ، كلية الزراعة ، جامعة عين شمس

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جامعة عين شمس
كلية الزراعة

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لجنة الإشراف:

د. محمد إمام رجب

أستاذ الخضر، قسم البساتين، كلية الزراعة، جامعة عين شمس (المشرف الرئيسي)

د. صلاح الدين المنياوى

أستاذ مساعد الخضر، قسم البساتين، كلية الزراعة، جامعة عين شمس

د. عادل عبد الخالق السيد

أستاذ باحث تغذية النبات ، قسم تكنولوجيا التسميد ، المركز القومي للبحوث

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الدراسات العليا

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ABSTRACT

Doaa Mahmoud Ahmed Youssef: Response of Some Strawberry Cultivars to Iron Foliar Spray. Unpublished M.Sc. Thesis, Department of Horticulture, Faculty of Agriculture, Ain Shams University, 2011.

A field experiment was carried out on three strawberry cultivars i.e., Festival, Camarosa and Sweet Charlie grown in sandy soil to study their response to two different sources of Fe foliar spray. i.e., Fe-EDTA, $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ with four concentrations i.e., 0, 130, 260 and 520 ppm treatments were used at three growth stages before blooming, 2 weeks after blooming and in the middle of the fruiting. Growth characters, yield component, mineral uptake and fruit quality were evaluated.

Results revealed that strawberry cultivars were significantly varied in their response to Fe foliar spray. Camarosa and Sweet Charlie in terms of yield and growth cultivars were the most responded cvs than festival cultivar. The most effective concentration was 520 ppm Fe-EDTA. Plant growth, yield component, macro and micronutrients and fruit quality in terms of T.S.S and Vit. C were greatly differed as regards to the used cultivars and due to Fe foliar spray. Results revealed that 520 ppm from Fe chelated gave the best fruit quality.

Key words: strawberry, *Fragaria x ananassa* Duch, cultivars, cultivation, yield, foliar, spray, iron, Fe, iron chelated, iron mineral.

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1. INTRODUCTION

Strawberry (*Fragaria x ananassa* Dush) family (Rosaceae) is considered as one of the most important vegetable crops in Egypt for local consumption and export to Gulf states and Europe, because of the definite market windows and the strong demand existed in Europe during the months from late November until late March.

It is very popular vegetable whose fruits either eating fresh or processed. These fruits have juicy refreshing flavour and available to consumers during the period from January to July continuously.

The total area planted with strawberry fresh plants was 8085 Feddan in 2009/2010 season, which produced about 189307 tons with average of 23.4 tons per Feddan. Moreover, in the same season 5664 Feddan were planted with frigo strawberry transplants which produced 96127 tons with an average of 17 tons per Feddan.

Several factors affect on vegetative growth, flowering, yield and quality of strawberry plants. Among these factors the used cultivars, besides other farming practices such as irrigation, pests control and fertilization.

Strawberry is a very sensitive plant to unnutritional balance. This might be due to its shallow root system and high productivity in relation to plant size, beside it is a perennial crop with a long life cycle. It is grown mostly in light soil textures which are very poor in macro- and micronutrients. So that, we spraying strawberry plants with needed micronutrients in frame of a complete and balance fertilizer program. Iron is considered as the most limiting micronutrients for strawberry growing and productivity.

Iron (Fe) is an essential element for plant growth. It is required for the formation of chlorophyll, the green pigments that capture light to produce food for the plant. Iron is also necessary for the proper functioning of many plant enzyme systems that influence respiration and