

# **EFFECT OF BIOLOGICAL FERTILIZERS COMPARED WITH MINERAL FERTILIZERS ON HINDI BESINARA MANGO TREES**

**By**

**RANIA ABD ELFATTAH ELSAYED**

**B.Sc. Agric. Sci. (Pomology), Fac. Agric., Cairo Univ., Egypt, 2002**

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## **APPORVAL SHEET**

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**By**

**LANIA ABD ELFATTAH ELSAYED**  
B.Sc. Agric. Sci. (Pomology), Fac. Agric., Cairo Univ., Egypt, 2002

## **APPROVAL COMMITTEE**

**Dr. Samir Zaki EL-Agami**.....  
Professor of Pomology, Fac. Agric., Assuit University

**Dr. Mohamed Ahmed Fayek**.....  
Professor of Pomology, Fac. Agric., Cairo University

**Dr. Ibrahim EL-Shenawy Ghoniem**.....  
Associate Professor of Pomology, Fac. Agric., Cairo University

**Dr. Ramzy George Stino**.....  
Professor of Pomology, Fac. Agric., Cairo University

**Date: 9 / 7 /2009**

**SUPERVISION SHEET**

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**SUPERVISION COMMITTEE**

**Dr. RAMZY GEORGE STINO**  
Professor of Pomology, Fac. Agric., Cairo University

**Dr. IBRAHIM EL-SHENAWY GHONIEM**  
Associate Professor of Pomology, Fac. Agric., Cairo University

**Dr. HASSAN ALI ABD ELKAREEM**  
Researcher of Pomology, Hort. Res. Inst., Agri. Res. Center, Giza

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**Name of Candidate:** Rania Abd ElFattah Elsayed

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**Supervisors:** Dr. Ramzy George Stino

Dr. Ibrahim El-Shenawy Ghoniem

Dr. Hassan Ali Abd Elkareem

**Department:** Pomology

**Approval:** 9 / 7 / 2009

### **ABSTRACT**

This study was carried out throughout three seasons in 2006, 2007 and 2008. And the experiment was conducted at a private orchard located at El-Mansouria, Giza Governorate, Egypt on 40-years mango trees "Hindi Besinara" cultivar.

This experiment was carried out to evaluate of the organic and bio-fertilizers on "Hindi Besinara" mango trees in comparison with mineral fertilizers. Eight sources of organic and natural fertilizers, compost "El-Neel" at 36.5 kg / tree , compost with bio fertilizers ( Nitroben 10g / tree + phosphorite 10g / tree ) , compost with natural rocks ( Feldspar 6.25 kg./ tree ) , compost + NR + BF , cattle manure 7.50 kg./tree cattle manure + BF , chicken Manure 25.33 kg./tree , chicken manure + BF . These treatments were added to the soil ( compared to the mineral fertilization ) . Compost + NR with BF application increased vegetative growth, yield fruit weight, fruit height and diameter as well as fruit T.S.S, total sugars and carotinoids , specially during the 3<sup>rd</sup> season compared to other organic and natural fertilizers with or without bio- fertilizers application. Mineral fertilizer was more effective in this concern than different organic and natural sources. However, the results indicated that organic and bio fertilizer applications had a long term effect successive seasons and could be used instead of mineral fertilization, besides they are human safe. The conclusion of this study was that the best treatment is compost + NR +BF . which increased yield, and had effective prosperous on fruits characters.

The recommendation of this study is condensation using organic fertilization at long term treatments that could be equal to mineral fertilization even more effectiveness . on the other hand it is obvious that organic fertilization is cheap, available and safe.

**Key Words:** Compost - Cattle- Manure - Natural rocks – Nitroben- Phosphorite- Mango



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# INTRODUCTION

Mango (*Mangifera indica* L.) is an important tropical fruit with a high demand in world markets. It is consumed both fresh and in processed form.

However, mango is also cultivated in more than 100 countries at both tropical and sub tropical latitudes Galan (1996).

The largest producing country in the world is India, with over 10 million metric tons, followed by China and Mexico at roughly 1 million metric tons each. Mexico, Egypt still ranks on the world production scale as the 16<sup>th</sup> largest producers of mangos. (Agriculture Technology Utilization and Transfer report "ATUT " 1997).

In Egypt, mango growing areas increased rapidly from year to year to reach 184.204 feddans in 2005, also the productive area reached 115.529 feddans which produced 532.422 tons / year with an average of 4.61 tons / feddan (Table 1).

It is well known that mangos need large amounts of fertilizers especially nitrogen so, the major problems facing mango growers are the high cost of excessive manufactured fertilizers needed for mango trees. Besides, these chemical fertilizers are considered as air, soil and water polluting agents during their production and utilization. Consequently, it has drawn the attention of researchers to use the organic fertilizers which are safe for human, animal and environment. Thus, it is preferred to use these natural fertilizers to avoid pollution and to reduce the costs of chemical fertilizers. Organic agriculture has a solid 2% market share and continues to grow at a rate of 20% per year.