

تأثير التسميد النتروجيني الحيوى والمعدنى على نمو وصفات الثمار
ومحصول أشجار المانجو

مجدى رابح محمد⁽¹⁾ ، عبد الله السيد حسن⁽¹⁾ ، فريد سعد قاسم⁽²⁾ ، سعيد عبد العزيز
نصار⁽²⁾

⁽¹⁾ قسم البساتين - كلية الزراعة - جامعة المنوفية - مصر

⁽²⁾ معهد بحوث البساتين - مركز البحوث الزراعية - الجيزة - مصر

**GROWTH, FRUIT QUALITY AND YIELD OF MANGO TREES AS
AFFECTED BY SOME BIO AND MINERAL NITROGEN
FERTILIZERS**

**M. R. M. Rabeh⁽¹⁾, A. E. Hassan⁽¹⁾, F. S. E. Kassem⁽²⁾ and S. A.
Nassar⁽²⁾**

⁽¹⁾ Hort. Dept., Fac. Agric., Minufiya University, Egypt.

⁽²⁾ Hort. Res. Inst., Agric. Res.Center, Giza, Egypt.

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ABSTRACT: *This study was carried out on seven years old of Zebda mango trees grown in clay loam soil under surface irrigation at mango orchard belonging to Horticulture Research Station at El-Kanater El-Khaira Barrage, Kalyubeya Governorate, Egypt, thirty six trees were selected for these study during the two successive seasons 2010 and 2011, to study the effect of soil inoculation with three bactrian strains (Azotobacter chroococcum, Azospirillum lipoferum or Bacillus polymyxa) and two sources of mineral nitrogen fertilizers (ammonium nitrate or ammonium sulphate) each applied solely at 1000 g actual N/tree, as well as the possible combinations between inoculation of any bio-N fertilizer from one hand and 500 g N of either NH₄NO₃ or (NH₄)₂SO₄ from the other, besides the N fertilization program adopted in the farm as control. The obtained results were as follows:*

1- Growth measurements: *The highest records of the studied growth parameters were obtained from trees inoculated with Bacillus polymyxa combined with either 2.5 kg of (NH₄)₂SO₄ or 1.5 kg NH₄NO₃ per tree (500 g. N/plant).*

2- Leaf mineral content: *Inoculation with Azotobacter chroococcum or Bacillus polymyxa + either NH₄NO₃ or (NH₄)₂SO₄ treatments were statistically the most simulative for increasing leaf mineral content. However, Bacillus polymyxa + either NH₄NO₃ or (NH₄)₂SO₄ was the superior as leaf N and P were concerned, while Azotobacter chroococcum + either*

NH₄NO₃ or (NH₄)₂SO₄ was the superior for leaf K content.

3- Yield and fruit quality: *Inoculation with Bacillus polymyxa + (NH₄)₂SO₄ at 500 g N/tree was the most effective treatment on yield as kg/tree, fruit length, diameter and weight and total soluble solids % while values of fruit shape index and acidity % were decreased.*

Therefore, inoculation with either Azotobacter chroococcum or Bacillus polymyxa as an additional bio-N fertilizer combined with mineral N fertilizer (ammonium nitrate or ammonium sulphate) each at 500 g actual N/tree could be safely recommended as an applicable N fertilization program under similar conditions of our study.

Key words: *Mango trees, bio-fertilizer, mineral fertilizer, growth, fruit quality, mineral content.*
