

African Journal of Agricultural Research

[AJAR Home](#)
[About AJAR](#)
[Submit Manuscripts](#)
[Instructions for Authors](#)
[Editors](#)
[Call For Paper](#)
[Archive](#)
[Email Alerts](#)
[Afr. J. Agric. Res.](#)
[Vol. 4 No. 2](#)

Viewing options:

- Abstract
- **Full text**
- [Reprint \(PDF\)](#) (96k)

Search Pubmed for articles by:

[Karakurt H](#)
[Guleryuz M](#)

Other links:

[PubMed Citation](#)
[Related articles in PubMed](#)

African Journal of Agricultural Research Vol. 4 (2), pp. 060-064 February, 2009
Available online at <http://www.academicjournals.org/AJAR>
ISSN 1991-637X © 2009 Academic Journals

Full Length Research Paper

Effects of indol-3-butyric acid (IBA), plant growth promoting rhizobacteria (PGPR) and carbohydrates on rooting of hardwood cutting of MM106 Apple rootstock

Halil Karakurt*, Rafet Aslantas, Gursel Ozkan and Muharrem Guleryuz

Department of Horticulture, Faculty of Agriculture, Ataturk University, 25240, Erzurum, Turkey.

*Corresponding author. E-mail: halilkarakurt@yahoo.com. Fax: (90)(442)2311541. Tel: (90)(442) 2312641.

Accepted 14 January, 2009

Abstract

This investigation was conducted to evaluate the effects of a range of indole-3-butyric acid (IBA) concentrations (1000, 2000 and 4000 ppm), two strains of *Agrobacterium rubi* (A-18) and *Bacillus subtilis* (OSU-142) and four carbohydrates (Glucose, Sucrose, Sorbitol and Mannitol) alone, in combination with two and three treatments on the rooting capacity of the hardwood cuttings of MM106 apple rootstock in greenhouse conditions. No rooting was obtained from control treatments but only low callus formation (10%). Single treatments did not induce rooting, except IBA-1000 ppm, OSU-142 and A-18, but induced better callus formation (20%) compared to control. Double and the three combinations were more successful in terms of rooting and callus formation. A-18+sorbitol, OSU-142+sorbitol+IBA-2000, A-18+sorbitol+IBA-2000 and A-18+sorbitol+IBA-4000 treatments were obtained from the highest rooting formation (30%) and OSU-142+sorbitol treatment had the highest callus rate (70%), that may be a precursor of adventitious root formation. IBA-1000 ppm treatment had the highest adventitious root number (16.5). A-18 treatment had the highest average adventitious root

Related Journals

- [Journal of Cell & Animal Biology](#)
- [African Journal of Environmental Science & Technology](#)
- [Biotechnology & Molecular Biology Reviews](#)
- [African Journal of Biochemistry Research](#)
- [African Journal of Microbiology Research](#)
- [African Journal of Pure & Applied Chemistry](#)

- [African Journal of Food Science](#)
- [African Journal of Biotechnology](#)
- [African Journal of Pharmacy & Pharmacology](#)
- [African Journal of Plant Science](#)
- [Journal of Medicinal Plant Research](#)
- [International Journal of Physical Sciences](#)
- [Scientific Research and Essays](#)

thickness (1.61 mm). The results indicate that double and triple combination of IBA, bacteria and carbohydrates are more effective in increasing rooting capacity and more quality rooting when compared to control, or carbohydrate, IBA and bacteria alone.

Key words: Apple rootstock, hardwood cutting, IBA, bacteria, carbohydrate.

[Advertise on AJAR](#) | [Terms of Use](#) | [Privacy Policy](#) | [Help](#)

© Academic Journals 2002 - 2009