Effects of NAA and BAP, double-layered media, and light distance on in vitro regeneration of Nelumbo núculera Gaertn. (lotus), an aquatic edible plant


Abstract

In vitro direct regeneration of Nelumbo núculera Gaertn. was successfully achieved from immature explants (yellow plumules) cultured on a solid MS media supplemented with combinations of 0.5 mg/L BAP and 2.5 mg/L NAA which resulted in 20.0 ± 0.30 number of shoots per explant and exhibited a new characteristic of layered multiple shoots, while normal roots formed on the solid MS basal media. The double-layered media gave the highest number of shoots per explant with a ratio of 2:1 (liquid to solid) with a mean number of 16.57 ± 0.22 shoots per explant with the formation of primary and secondary roots from immature explants. In the study involving light distance, the tallest shoot (10.67 ± 0.33 mm) obtained from the immature explants was at a light distance of 200 mm from the source of incandescent light (2000 lux). The plants were successfully rooted and maintained in clay loam soil after 8 months being maintained under in vitro conditions. © 2014 Noraini Mahmad et al.

Indexed keywords

- EmTREE drug terms: naphthylacetic acid, 6-n benzyladenine, acetic acid, naphthol derivative, phytohormones
- EmTREE medical terms: naphthylacetic, 6-n benzyladenine, acetic acid, naphthol derivative, phytohormones
- MeSH: Acetic Acid, Lotus, Naphthols, Plant Growth Regulators, Plants, Edible, Reproduction

Chemicals and CAS Registry Numbers:

- 1 naphthylacetic acid, 88-87-3; 6-n benzyladenine, 1221-39-7; acetic acid, 62-49-7, 127-08-2, 127-09-3, 64-19-7, 71-50-1;
- Acetic Acid, Naphthols, Plant Growth Regulators

ISSN: 23560140
Source Type: Journal
Original language: English
Published: The Scientific World Journal

DOI: 10.1155/2014/745148
PubMed ID: 24895680
Document Type: Article
Publisher: The Scientific World Journal

Related documents

- In vitro plant regeneration of lotus (Nelumbo nucifera) (2013) Open Life Sciences