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

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Abstract

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In vitro direct regeneration of *Nelumbo nucifera* Gaertn. was successfully achieved from immature explants (yellow plumule) cultured on a solid MS media supplemented with combinations of 0.5 mg/L BAP and 1.5 mg/L NAA which resulted in 16.00 ± 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 16.67 ± 0.23 shoots per explant with the formation of primary and secondary roots from immature explants. In the study involving light distance, the tallest shoot (16.67 ± 0.23 mm) obtained from the immature explants was at a light distance of 200 mm from the source of inflorescent light (1000 lux). The plantlets were successfully acclimatized in clay loam soil after 8 months being maintained under in vitro conditions. © 2014 Noraini Mahmad et al.

Indexed keywords

EMTREE drug terms:

1 naphthylacetic acid 6 n benzyladenine acetic acid naphthol derivative phytohormone

EMTREE medical terms:

 acclimatization article clay controlled study explant in vitro study inflorescence light liquid loam soil Murashige and Skoog medium *Nelumbo nucifera* nonhuman plant regeneration plant root plant tissue shoot solid drug effects edible plant Lotus physiology regeneration

MeSH:

Acetic Acid Lotus Naphthols Plant Growth Regulators Plants, Edible Regeneration

Chemicals and CAS Registry Numbers:

1 naphthylacetic acid, 86-87-3; 6 n benzyladenine, 1214-39-7; acetic acid, 127-08-2, 127-09-3, 64-19-7, 71-50-1;

Acetic Acid; Naphthols; Plant Growth Regulators

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