



[< Back to results](#) | 1 of 1[Export](#) [Download](#) [Print](#) [E-mail](#) [Save to PDF](#) [Add to List](#) [More... >](#)[Full Text](#) [View at Publisher](#)

Sains Malaysiana

Volume 48, Issue 2, February 2019, Pages 301-307

Effects of n-methyl-n-nitrosourea on seed germination of *Stevia rebaudiana* (Article) [\(Open Access\)](#)

Ahmad, L.W.Z.^{a,b}, Zainuddin, Z.^b, Osman, M.^c, Mohamad, A.^d, Sidik, N.J.^a ^aFaculty of Applied Sciences, Universiti Teknologi MARA, Shah Alam, Selangor Darul Ehsan, 40450, Malaysia^bKulliyah of Science, International Islamic University Malaysia, Kuantan, Pahang Darul Makmur, 25200, Malaysia^cDepartment of Crop Science, Faculty of Agriculture, Universiti Putra Malaysia, UPM, Serdang, Selangor Darul Ehsan, 43400, Malaysia[View additional affiliations](#) 

Abstract

[View references \(41\)](#)

Stevia rebaudiana is a unique plant that contains non-caloric natural sweetener and has gained much interest among Malaysians. In this study, the effect of different concentrations of N-methyl-N-nitrosourea (MNU) was assessed in inducing mutation in *Stevia* seeds to produce genetic variations, which is valuable for crop improvement. *Stevia* seeds were soaked in six concentrations of MNU (0.0, 0.13, 0.25, 0.38, 0.50, and 1.00 mM) for four different durations (15, 30, 45, and 60 min) at room temperature. As a result, application of MNU reduced the germination percentage and germination rate of *Stevia* seeds as compared to the control group. Prolonged exposure to the highest concentration of MNU recorded the lowest percentage of germination ($2.5 \pm 1.4\%$) and the lowest germination rate (0.21 ± 0.16). Tricots were observed among seedlings treated with 0.13, 0.38 and 1.0 mM of MNU for 30 min. Presence of seedlings with albino colour proved the mutagenic effect of MNU on *Stevia* genome. Based on the percentage of seedlings with chlorophyll mutation, the most effective and efficient mutagenic treatment to induce mutation was 60 min in 0.25 mM of MNU. © 2019 Penerbit Universiti Kebangsaan Malaysia. All Rights Reserved.

Reaxys Database Information

[View Compounds](#)

Author keywords

[Germination](#) [MNU](#) [Mutagenic effectiveness](#) [Mutagenic efficiency](#) [Stevia rebaudiana](#)

Indexed keywords

Species Index: [Stevia rebaudiana](#)

Metrics

0 Citations in Scopus

0 Field-Weighted Citation Impact

PlumX Metrics 

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)[Set citation feed >](#)

Related documents

The effect of temperature and flow rate on the clarification of the aqueous stevia-extract in a fixed-bed column with zeolites

Mantovaneli, I.C.C. , Ferretti, E.C. , Simões, M.R. (2004) *Brazilian Journal of Chemical Engineering*Purification and toxicity studies of stevioside from *Stevia rebaudiana* BertoniRajab, R. , Mohankumar, C. , Murugan, K. (2009) *Toxicology International*Effect of plant density on *Stevia rebaudiana* Bertoni water consumptionPardini, A. , Paterniani, M.L.S. , Baldi, A. (2010) *Advances in Horticultural Science*[View all related documents based on references](#)[Find more related documents in Scopus based on:](#)[Authors >](#) [Keywords >](#)

ISSN: 01266039

Source Type: Journal

Original language: English

DOI: 10.17576/jism-2019-4802-05

Document Type: Article

Publisher: Penerbit Universiti Kebangsaan Malaysia

[References \(41\)](#)[View in search results format >](#)