Preliminary Studies on Mutagenic Effects of Sodium Azide and γ-Ray Irradiation on Organogenesis in *Guzmania* and *Aechmea* Bromeliads

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Abstract

In this study, we treated callus and decapitated plantlet explants obtained from ornamental bromeliads with chemical and physical mutagens, including sodium azide and γ-ray irradiation. When calli of *Guzmania* 'Hilda' treated by sodium azide, the survival rate was 0%. Decapitated plantlets of *G*. 'Hilda' were excised as explants and cultured on a regeneration medium containing 1/3MS basal medium supplemented with 3.0 mg l^{-1} BA + 0.5 mg l^{-1} NAA. The survival rate of decapitated plantlet explants treated with 0.5 mM sodium azide for 60 minutes was 51.3%, about half-lethal dose. However, all explants treated with 2.0 mM sodium azide showed browning and/or dead. In addition to the survival rates of decapitated plantlet explants of *Aechmea fasciata*, *G*. 'Hilda', *G*. 'Cherry', *G*. 'Luna' and *G*. 'Focus' irradiated by γ-ray showed 74.2-100% with the exception of the *G*. 'Focus' irradiated by 15 Gy, which dropped to 45.0%. At present, mutant plantlets showed a great deal of chimeras in leaf and were transplanted to potting media. Bromeliad mutation protocols by sodium azide and γ-ray irradiation presented in this study makes it possible to refer to vegetative propagated plants for mutation breeding.

Key words: Bromeliad, Sodium azide, γ-Ray, Mutation breeding

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