

A review on induced mutagenesis of *Stevia rebaudiana* Bertoni

ABSTRACT

Stevia rebaudiana Bertoni in the Asteraceae family is commercially valuable and cultivated throughout the world due to the great demand for its steviol glycosides (SGs) contents particularly rebaudioside A. Previous studies confirmed that maximal content of SGs in stevia was achieved at or just before flowering, and delayed flowering with long days provide longer duration for steviol glycosides accumulation. However, there is no suitable stevia variety to be cultivated in Malaysia due to her short day length. Mutation induction, including gamma irradiation, had been shown to be useful for generating genetic variations as well as developing new plant varieties from which desired mutants were successfully selected. The use of mutagens, both physical and chemical, has helped in creating mutants that expressed the selected desirable traits. This paper presents some selected essential data available in extant scientific studies on stevia with the focus on application of gamma irradiation on stevia. Both established achievements and recent publications of gamma radiation on stevia were reviewed. Emphasis is on the exceptional potential of stevia through induced mutation approach especially by using gamma rays.

Keyword: Gamma irradiation; Induced mutagenesis; *Stevia rebaudiana*; Steviol glycosides