

A REVIEW OF INDUCED MUTAGENESIS IN *Theobroma cacao*

SITI NUR AIDA BINTI NOR MOHD DARUL

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ABSTRACT

A REVIEW OF INDUCED MUTAGENESIS IN *Theobroma cacao*

Theobroma cacao or also called cocoa is a tropical evergreen tree from family Malvaceae. The tree is grown for its edible seeds and important in the chocolate making industries. Nowadays, the number of cocoa grown is decreasing as there are lack number of cocoa varieties that are resistance towards pest and disease. Mutation induction 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 used of mutagens, both physical and chemical, has helped in creating mutants that expressed the selected desirable traits. The use of mutagenesis in cocoa breeding has been reported in general studies to improve the cocoa varieties. However, further investigation on the potential of this technique need to be conducted. Therefore, the aim of this paper is to discuss the current state of mutation breeding in cocoa. The information on the cocoa varieties and potential of mutation breeding in cocoa will contribute to a better understanding in cocoa breeding program. This paper presents some selected scientific studies on cocoa with the focus is on mutation breeding in cocoa. From the review, mutation breeding could be one of the alternatives in producing new variety of cocoa with improved characteristic.

KEYWORDS: Mutation breeding, gamma irradiation, *Theobroma cacao*, mutant, induced mutation