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IMPROVEMENT OF KENAF (HIBISCUS CANNABINUS L.) THROUGH GAMMA RAY INDUCED MUTATION

Kenaf (Hibiscus cannabinus L.), a tropical crop from the Hibiscus family, is one of the world's economically important fibre crops particularly in the Asia-Pacific region. In Malaysia, kenaf was identified as one of the main commodity crops and could be the country's next golden crop after oil palm. Currently, kenaf-based products are getting higher demand from local and international market. Thus, the improvement of kenaf crop for high fibre production is highly needed to meet the demand from the industries. Mutation induction is a method to increase genetic divergence associated with selection, recombination, or a combination of these approaches in plant breeding. This method is very promising to plant breeders for developing a new plant variety with desirable traits. In this project, seeds of a kenaf variety (V36) were used as starting materials for mutation induction and were obtained from National Kenaf and Tobacco Board (NKTB). These seeds were irradiated using gamma ray and mutation induced via acute and chronic irradiation methods. The aim of this research project was to develop new mutant varieties with high fibre characteristics. Radiosensitivity tests were done for determination of optimum dose for irradiation to get the higher mutation rate without eliminating desirable traits. Screening and selection for desirable traits will be done for several generations until stable mutants with targeted traits are obtained. At present, several potential mutants with desirable morphological and agronomical traits were observed in M3-M4 generations. Thus, gamma ray induced mutation is useful and reliable tools for kenaf breeding program in this modern era.

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