

ROLE OF PLANT BIOTECHNOLOGY FOR THE GENETIC IMPROVEMENT OF FRUIT CROPS, WITH SPECIAL REFERENCE TO BANANA, PAPAYA, PINEAPPLE, AND MANGO

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Tropical fruit crops such as banana, papaya, pineapple, and mango are susceptible to various diseases caused by fungi, bacteria, and viruses. Biotechnology and molecular methods have been used for genetic enhancement of these crops, especially in developed countries. Plant biotechnology involves the application of tissue culture and genetic engineering to produce fruit crops that are resistant to diseases and pests, as well as to obtain higher yield and improve fruit quality. With the development of genome sequencing or plant genomics, assisted breeding can be carried out after the candidate genes have been identified and used for further manipulation. This review focuses on the achievements and advances in breeding programs and the application of plant biotechnology and molecular biology in the genetic improvement of banana, papaya, pineapple, and mango cultivated in Malaysia and worldwide.

Keywords: genetic improvement, fruit crops, banana, papaya, pineapple, mango