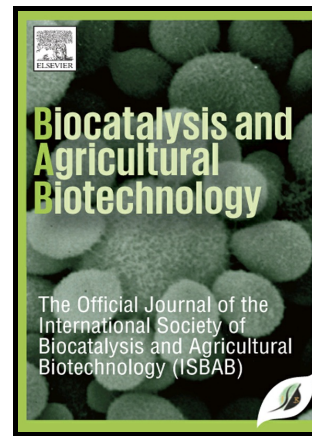


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Biotechnology of oil palm: current status of oil palm genetic transformation

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Abstract

Oil palm is the most productive vegetable oil in the world for human consumptions and industrial applications. Increasing demands of palm oil over the years have led the research interests to improve yield and oil quality through breeding approach. Concurrently, genetic transformation has been identified as the alternative method to accelerate the breeding and also to produce high-value traits that are almost impossible to obtain through breeding. During the last 25 years, significant progress has been made in oil palm genetic transformation, particularly in the development of transformation methods such as particle bombardment and *Agrobacterium*-mediated method. In parallel, various tissues have also been examined to identify the best target material for transformation, particularly tissue with high regenerability. Similarly, various selection systems have been developed for efficient selection of transformed cells. Transformation vectors for most target traits for oil palm improvements also have been constructed. This review provides the recent major advances and new directions that could be applied in oil palm genetic transformation.

Keywords: transgenic oil palm, genetic transformation, particle bombardment, *Agrobacterium*-mediated transformation, oil palm improvements

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