

**A REVIEW ON CLONAL OIL PALM: FUTURE PROSPECTS FOR PALM
OIL SUSTAINABILITY**

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ABSTRACT

A REVIEW ON CLONAL OIL PALM: FUTURE PROSPECTS FOR PALM OIL SUSTAINABILITY

The cultivation of the oil palm (*Elaeis guineensis* Jacq.) as a cash crop has expanded tremendously as a major source of the world supply of oils and fats. There is an urgent need for improving productivity due to increasing global demands for vegetable oils. Whereas by aiming to boost productivity and enhance sustainability, tissue culture is used to produce high-quality plants that can be cloned to quickly grow genetically identical to the parent plant in producing superior clonal oil palm material instead of only propagate through conventional method. Thus, the objective in this review is to identify the clonal oil palm in terms of narrow genetic base, limited ortet materials, inefficient cloning process, labour intensive, cost, the advantage in terms of height and its future prospect. Through this review, broaden genetic base, the oil yield relation of ortet and clone, improving inefficiency of cloning, cost of plantlet, labour intensive reduction and problem and shorter palm help in harvesting process has raised the issues for discussion in this review. The previous study reported that in large-scale commercial propagation, the bioreactor is used in multiplying oil palm suspension culture by using the liquid tissue culture system in reducing the labour used and innovation design by the technology is done in improving cloning process in terms of eliminating the contamination and increasing the output for better cloning efficiency for future prospect. In short, this elite clonal oil palm material is expected to become greater due to the ability to create the “second wave”, the Agricultural Biotechnology Research and Development (R&D), should come out further improvement in various aspects in realizing the better quality improvement for its sustainability over the coming years.

KEYWORDS: *clonal oil palm, oil yield, tissue culture, genetic base*