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New Frontiers for the Oil Palm Industry Through Genome Technology

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The oil palm is the most productive oil bearing crop that is an important source of edible oil. As land resources become more limited, sustainable growth is needed to increase productivity on existing agricultural land to meet the needs of the growing populations. Nevertheless, genetic improvement of oil palm through conventional breeding is extremely slow and costly. Revolutionary approaches are needed to improve productivity and address the stagnating average yields observed over the last three decades. In 2013, the impetus to this "green" revolution came with the successful sequencing and annotation of the oil palm genome. The release of the genome data led to a myriad of discoveries that will eventually contribute to the development of disruptive technologies to assist the oil palm realise its real yield potential. Examples of these discoveries include the identification of the SHELL *and fruit colour genes that have important implications in improving yield and harvesting standards. The* SHELL *gene discovery led to the development of the first oil palm molecular diagnostic assay that was made available to the industry. The assay will change the way the oil palm industry produces commercial planting materials and will especially prove invaluable in enhancing breeding efficiency.*

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