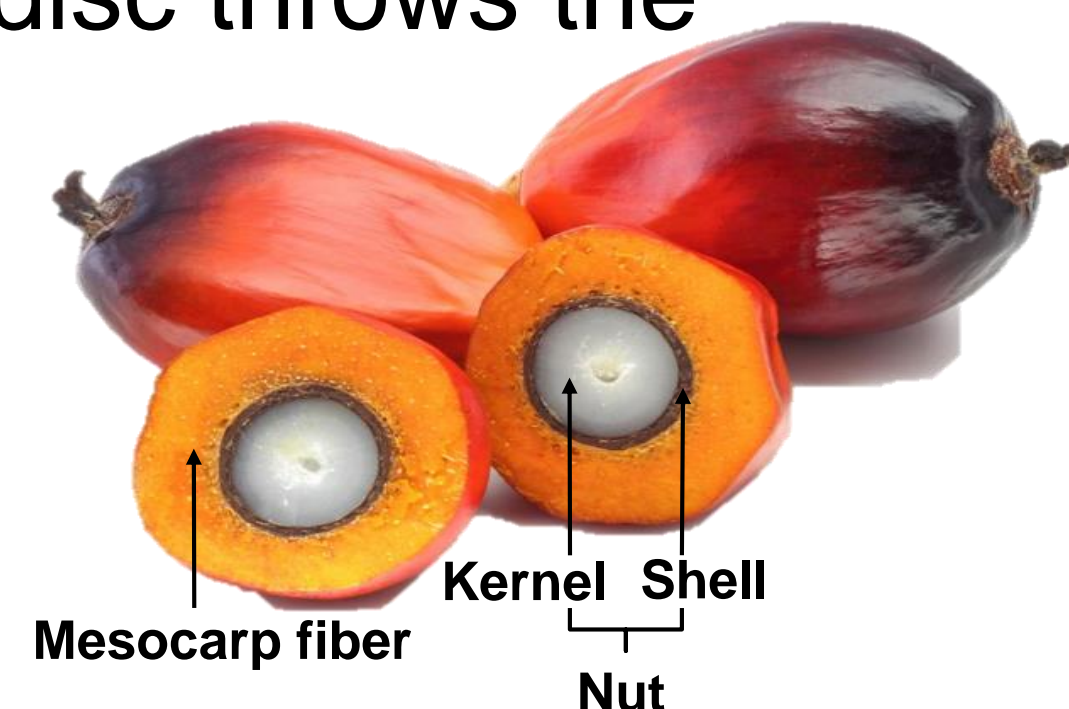


ROTADISC - MESOCARP AND DRUPE NUTS SEPARATOR FOR HIGHER OIL RECOVERY

PATENT NO. : PI 2019001154

TECHNOLOGY

The oil palm or (*Elaeis guineensis Jacq*) is one of the major agricultural crops of Malaysia. Two types of oils can be derived from oil palm fruits; 1) crude palm oil (CPO) from mesocarp and 2) palm kernel oil (PKO) from the nuts. ROTADISC is a new invention that relates to a device and method to separate mesocarp fibres from nuts of oil palm fruitlets by centrifugal and frictional force. A centrifugal force created by rotating disc throws the fruitlets outward the walls creating a frictional contact with the surfaces, resulting in a separation of mesocarp fibres from the nuts.



CURRENT ISSUE

Approximately between 5 to 11% of oil still remain in the mesocarp, even after being subjected to high pressure mechanical screw presses in the current palm oil mill.

The exceeded pressure exerted by the screw press results in higher nut breakage, estimated to reach as high as 40% which also lead to higher the kernel losses.

The cracked kernel will deliberate certain amount of kernel oil during extraction process and contaminate the crude palm oil as well as affecting the commercial value of the final palm oil product.

INVENTIVENESS & NOVELTY

This invention provides fast separation process in comparison with the current palm oil mill digester at the the same time can reduce the use of steam.

MARKET POTENTIAL

Palm Oil Industries

Research Centre

Food Processing

Renewable Energy

PROCESS FLOW

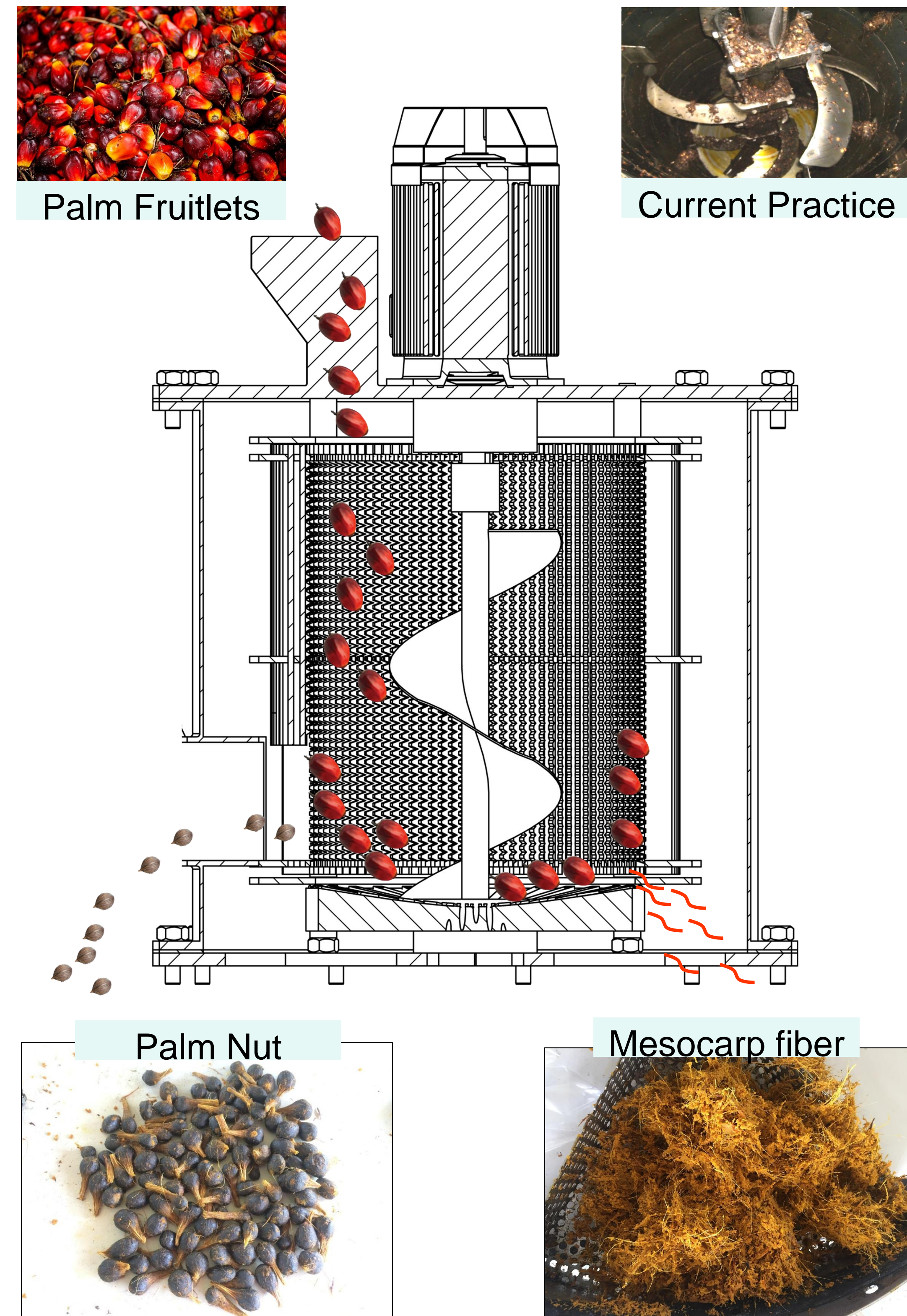


Table 1. Oil quality produced from different separation speeds

Quality Parameter	Separation Speed				MPOB Standard
	600 rpm	900 rpm	1200 rpm	1500 rpm	
FFA (%)	1.07	1.06	1.07	1.07	3.5 – 5.0
DOBI (%)	2.81	2.93	2.75	2.69	> 2.3
Carotene (ppm)	788	796	793	792	500 -700

USEFULNESS & APPLICATION

Rotadisc is used to separate mesocarp fibers from the nuts of oil palm fruitlets prior to oil, hence maximum pressure can be applied to squeeze the oil out from fibers extraction/pressing without any nuts/kernel breakage.

IMPACT OF THE PRODUCT

- Continuous dry separation process
- Efficient separation (98%)
- Fast separation process (30 seconds)
- Automatic separation with PLC control

TRL : 5 - Validation in real environment



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