

# BATCH AND CONTINUOUS FRYING TEST SERVICES

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**T**hree frying facilities are available in MPOB, *i.e.* pressure, open fryers (batch) and pilot plant continuous fryers (*Figure 1*). The pressure fryer is commonly used for products such as breaded chicken to retain its juiciness while the open fryer is more for products to be eaten instantly such as French fries, chicken and fish nuggets. The pilot plant continuous fryer is a small-scale commercial potato chips fryer, built for R&D purposes for small production volumes. Besides potato chips, this pilot plant can also produce banana chips, *muruku* and tapioca chips.

## OBJECTIVES OF FRYING TEST SERVICE

- To provide frying test as a service to manufacturers of oils.
- To provide guidelines for batch and continuous frying and their quality parameters such as free fatty acids, colour, smoke point, polar content, polymer content, oxidative stability, *etc.*

- To study the effect of antioxidants in batch and continuous frying and their influence on the useful life of the oil.

## DESCRIPTION OF MPOB BATCH FRYERS (pressure and open)

The capacity of oil required for the pressure fryer (Henny Penny – Model 520) is 17 kg and that for the open fryer (Frymaster) 11.5 kg. Both fryers are electrically heated. Frying is normally done for 40 hr, *i.e.* 8 hr per day for five consecutive days. The level of frying oil in the fryer is maintained by topping up with 10%-15% fresh oil at the end of each day.

## DESCRIPTION OF MPOB PILOT PLANT CONTINUOUS FRYER

The MPOB pilot plant continuous fryer was designed and built by Heat and Control Pty Ltd, Australia in 2001 and installed and commissioned



(a) Pressure fryer



(b) Pilot plant continuous fryer



(c) Open fryer

*Figure 1.*

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in 2002. The fryer has an oil capacity of about 200 litres and a throughput of 50 kg potato chips per hour. Heating is by direct electrical (external heating).

### **EXPECTED BENEFITS**

- A package is offered for testing frying performance, oil analyses and product evaluation.

- A comprehensive report is given with recommendations made on request.

### **REFERENCE**

RAZALI, I (2004). Frying facilities (continuous fryer) for pre-commercialization. Palm-Based Food Technology Seminar.

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