



D'Palpa : An Efficient Pulp Separator for Mesocarp Removal

PATENT NO. : PI 2022004258

TECHNOLOGY

Dabai (*Canarium odontophyllum*) is a fruit-bearing tree in the *Canarium* genus of the *Burseraceae* family. It is indigenous to Borneo, known locally as DABAI in Sarawak and KEMBAYAU in Sabah and Brunei. The fruit must be soaked in hot water to soften before being eaten with salt, sugar, black pepper, or soy sauce.

Dabai fruit tastes like an avocado, and its flavour and texture have been compared to olives. This fruit pairs well with sago and can serve as a sambal side dish or fried rice. The seeds have a flavour similar to almonds or pistachios and can be eaten.

D'Palpa is an innovative machine offering new technology that greatly helps separate the pulp from its nuts. The design of this machine is simple, and easy to operate.

During operation, fresh dabai fruit will be loaded into a netted cage-shaped drum up to half of the drum. The speed of the drum will be adjusted depending on the operator's suitability. The rotational direction of the drum and agitator blade will be set to rotate in the same or opposite direction.

The separated pulp will be collected in a tray beneath the drum, while the nuts will remain in the drum. D'Palpa is a portable machine, easy to clean, speeds up the pulp separation process, time and energy efficient, and less maintenance.

CURRENT ISSUES



Dabai fruit is a seasonal fruit found in Sarawak but is difficult to obtain out of season due to the high demand for the fruit. It is usually sold at a premium price initially, but the price drops when there is an excess supply. Dabai is also found twice yearly, between May to June and December to January.



Traditionally, the dabai fruit must be soaked in warm hot water at a temperature of 50-60 degree celcius for 10-20 minutes before being separated. The manual separation process will take a long time because it must be done individually with small fruits measuring 3-4 cm long and 2-3 cm wide.



Various value-added methods are implemented as a solution to the price drop or to ensure that the supply of wind turbines is always available throughout the year, even outside of the wind storm season. In recent years, dabai-based products such as pastes, sauces, dabai fried rice, crackers, cakes and biscuits, mayonnaise, and various other products have begun production.

MARKET POTENTIAL

Agricultural industry (fruits)

Research Centre

Food Processing Industry



Project Leader,
Prof. Ts. Dr Rosnah Shamsudin
Dept. of Process & Food Engineering,
Faculty of Engineering,
Universiti Putra Malaysia
rosnahs@upm.edu.my



Ts. Dr. Mohd Salahuddin Mohd Basri
Dept. of Process & Food Engineering,
Faculty of Engineering,
Universiti Putra Malaysia
salahuddin@upm.edu.my



Nor Aziatul Azida Binti Azhari
Faculty of Engineering
Universiti Putra Malaysia
Serdang Campus, Selangor
gs57124@student.upm.edu.my

youtube.com/user/bppupm

facebook.com/UniPutraMalaysia

@uputramalaysia

instagram.com/uniputramalaysia

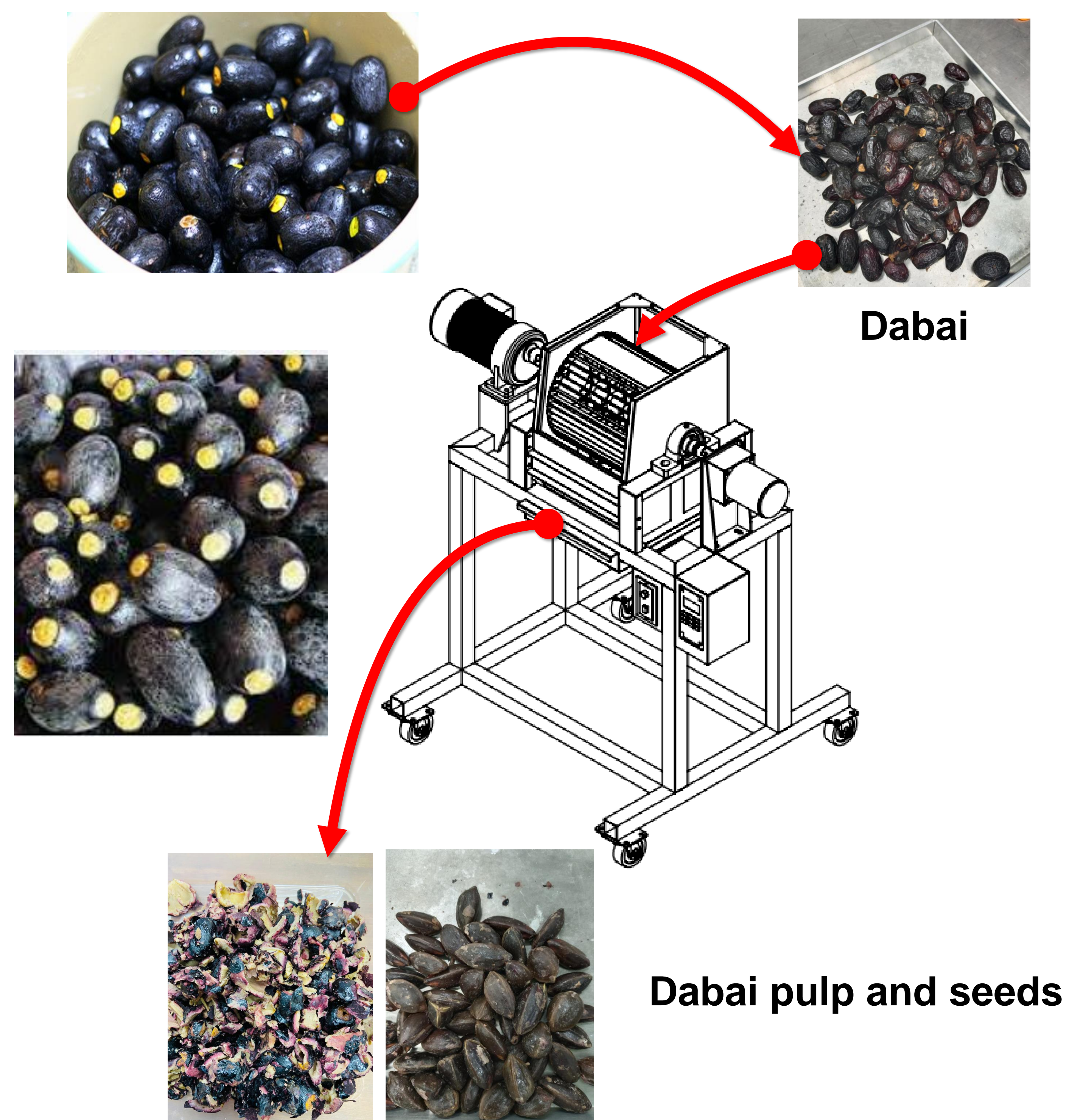
www.sciencepark.upm.edu.my



AGRICULTURE • INNOVATION • LIFE

BERILMU BERBAKTI
WITH KNOWLEDGE WE SERVE

PROCESS FLOW



INVENTIVENESS & NOVELTY

D'Palpa is an innovative machine offering new technology that greatly helps separate the pulp from the nuts. This machine is portable, easy to clean, speeds up the pulp separation process, time and energy efficient, and is easy to maintain. The design of this machine is simple, and easy to operate.

USEFULNESS & APPLICATION

The D'Palpa is a machine that separates pulp from its nuts. The dabai pulp produced by D'Palpa can make the dabai flesh easier to be processed in the next products.

IMPACT OF THE PRODUCT

- Continuous separation process of pulp and seed.
- Dry separation process.
- Efficient pulp removal process (98%).
- Fast separation process.
- Does not require skilled manpower to operate machine

BENEFIT OF THE PRODUCT

- Time Saving
- Energy Saving
- Easy to clean.
- Portable
- Easy to use.
- Easy to maintain.