







# **COMPOSITE COFFEE TABLE FROM AGRICULTURAL WASTE** IPR (PATENT/ID/C) NO MY 15-01550-0101

#### **INTRODUCTION OF TECHNOLOGY**

Small tables made from sugar palm fibre, kenaf fibres and banana fibres reinforced unsaturated polyester composites were fabricated using hand

Specification
Able to load at least four cup of coffee
The top plate must not absorb any spilled water
Weight should not exceed 5 kg
Easy to move
Can fit small space (40 cm x 40 cm) size
Less than RM 200
Suitable to compete the market price
Have safety edges
Can load below than 10 kg
One unit
Attractive color
A fit joining
Good finishing



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lay-up technique. These natural fibres were chosen for this project due to their good characteristics and performance. The objective of this project is to fabricate tables that are able to compete the market demands in terms of weight, design and aesthetic values.

The main advantages of composite materials compared with bulk materials are lower density, high aesthetical value, higher strength and stiffness. This project was started with extraction of the raw fibres that were arranged in line position (banana fibres and kenaf fibres) and crushed fibres (sugar palm fibres) in powder conditions. In addition, hand lay-up method was used to fabricate the table by using resin and a steel mould. Two different methods in the fabrications were made and only differ from each other in terms of their mould design; actual and modified moulds. The first fabrication produced 5.11 kg of finished product that was managed to reduce to 3.0 kg after the second fabrication. The second fabrication product was found to be more lighter, thinner top plate, stronger due to better compression of natural fibres and resin mixtures, honeycomb structure, and more economical due to reduction in amount of resin used in the fabrication. Finishing step was carried out by using sand paper to even the surface, improved the appearance of the fabricated table and spray paint for coloring purpose and protection against scratch.

#### MARKEI POIENIIAL

#### **Consumer/End User**

- Residential home
- Commercial buildings

#### Industry

• Table and furniture manufacturers



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- Materials Selection, Concurrent Engineering, Design for Sustainability,

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