

Design and Development of Mobile Tender Coconut Crusher

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Abstract

Tender Coconut Crushing Machine is intended to crush the tender coconut husks after consumption. The main goal of this machine is to reduce the amount of tender coconut waste produced after consumption thereby eliminating the environmental pollution. The machine is made up of four shafts with 14 blades each; they are arranged on radial axis and fixed into 3 discs to apply pressure on the tender coconut shell and husk during the crushing process. During the crushing operation, the four shafts connected to the discs at a specific pitch circle diameter rotates creating a centrifugal action and thereby the blades pivoted to the four shafts acts as a hammer. This hammering process shreds tender coconut husk and its shells into crushed form making it suitable for agricultural applications. The machinery is capable of processing 4000-4800 tender coconut husks with shells during 8-hour shift generating 900-1200 kg of crushed product. For easy conveyance for better operation onsite, the machinery is connected with a tractor. The drive for the operation of the machinery is obtained from the tractor's PTO shaft. Finally, the aiding the attainment of goals by lessening tender coconut husk waste and converting it into value added agricultural produce.

Keywords – Tender coconut; crushing process; hammer blade; PTO shaft; agricultural application