



## RESEARCH PAPER

# Development and performance evaluation of shelling unit of power operated groundnut decorticator

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**Abstract :** Decortication is an operation in which the shells of groundnut are separated with least damage to kernels and it involves a lot of drudgery when done manually. Decortication of groundnut is an essential operation prior to use of kernel in any form. Kernel breakage is an important parameter for developing a suitable groundnut decorticator. As a result, a research to develop a power operated groundnut decorticator as an upgrade to the existing 1 hp power operated commercially available groundnut decorticator was undertaken in the Department of Farm Machinery and Power Engineering, CAET, Junagadh during 2021–2022. To start with, the moisture content and feed rate of existing cast iron blade type groundnut decorticator were optimized for better performance for the variety GJ-21. Thereafter, the performance of rubber padded blade, wooden blade and rasp bar type blade of groundnut decorticator was studied and compared. From the analysis of data, it was found that the optimized moisture content and feed rate of groundnut pods for getting better performance of existing cast iron blade type decorticator were respectively in the range of 9.5 % (w.b.) and 90-95 kg/h. Similarly, power operated groundnut decorticators, it was found that there was 94.0 %, 92.8 % and 90.4 % decorticating efficiency in rubber padded blade, wooden blade and rasp bar type blade, respectively. Breakage per cent was found 3.91 %, 5.66 % and 7.80 % in developed power operated groundnut decorticator for rubber padded blade, wooden blade and rasp bar type blade, respectively.

**Key Words :** Groundnut decorticator, Shelling of groundnut, Rubber padded blade, Decorticating efficiency, Per cent broken kernels

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