

# A Device for Dehusking Arecanut (*Areca catechu*-Linn)

Bangali Baboo\*

## ABSTRACT

A pedal operated scissors mechanism was developed for dehusking dry and green arecanuts. Up to 60 kg of dry arecanuts could be dehusked by an unskilled worker in a day of eight hours. The immature nut (chali) remained attached to one of the split halves of husk and could be taken out by a simple knife.

## INTRODUCTION

The production of arecanut in India is 1.66 lakh tons, of which two-thirds is processed as ripe nuts and one-third as tender nuts. Dehusking is essential feature of arecanut processing.

At present skilled labour are employed for dehusking of dry and tender arecanuts with country tools and the out turn varies from 40 to 100 kg (dry nuts) and from 30 to 40 kg (tender nuts). Since, not much work has been reported<sup>1,2</sup> a dehusking machine was developed.

## THE ARECANUT

Arecanuts (commercial varieties) are generally oval or oblong in shape. The husk towards penuncle and above the nut (chali) is soft whether the nut is dry or tender. If a tool is used at this part of husk, it requires least force for dehusking.

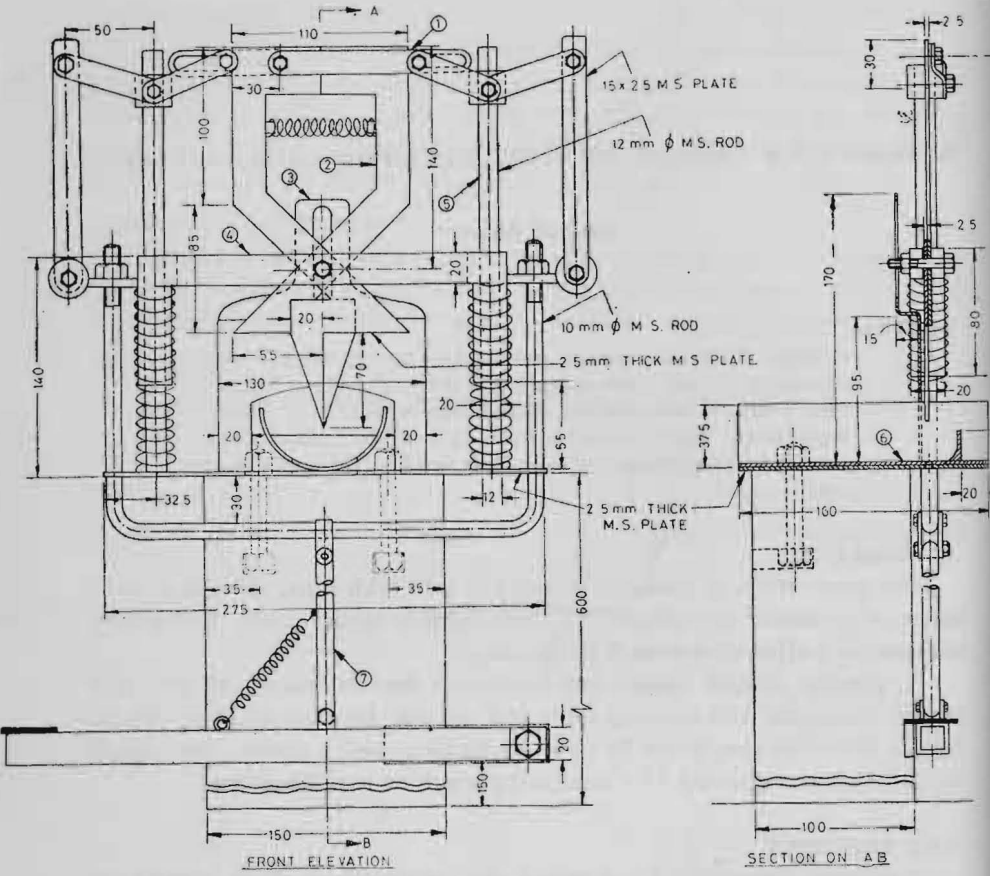
## THE DEVICE

The device (Fig. 1) comprises of scissors mechanism, frame and platform, and pedal operated lever mechanism.

The scissors made of hard steel are mounted on a frame with a guide and compression spring. The frame and platform are made of mild steel rods and plates. The two guide rods on the frame are provided each with a mild steel bush on which scissors are mounted and the compression springs around bush, bring back the scissors to normal position after each operation. A half cut G.I. pipe piece with feed stop, ahead of scissors point to restrict the outward movement of nut, is fixed on platform to guide the position of the nut.

\*Scientist, (F.M.P.) Indian Institute of Sugarcane Research, Lucknow-226002

Paper received : July 1981; revised : December 1981



- (1) Scissors Linkage
- (2) Scissors
- (3) Scissors Guide
- (4) Movable Frame
- (5) Fixed Frame
- (6) Platform
- (7) Pedal Linkage

All Dimensions in mm

Fig. 1 Device for Dehusking Arecanut

The pedal mechanism is made of mild steel rod, sheet and angle iron. The lever rod is pulled down when pressing the pedal and is brought back to its position by the tension spring fixed to the lever arm and the frame. The lever rod is connected to frame to which scissors are fixed.

**THE OPERATION**

The device can be operated by one or two unskilled labourers. The operator sits on a wooden stool keeping his right foot on pedal. The nuts are fed one by one below scissors in such a way that its peduncle end faces towards right side. The pedal is then pressed. The scissors while moving downwards, pierce the husk, and then expand splitting the

husk into two parts. The nut is taken back by left hand and peeled off with both hands. The dehusked nuts and husk are collected separately.

When two persons are available for operation, one will operate the device and supply the split open nuts to another who will then peel them off by hands.

## RESULTS AND DISCUSSION

It was observed that one and two unskilled workers could dehusk, without any damage to nuts, about 60 and 100 kg nuts (end product) respectively in a day of eight hours.

Comparison of the test trial data (Table-1) reveals that the out turn by two workers was more than double as compared to single worker during dehusking tender nuts. However, scissors showed corrosive effect in this case. This may be due to the fact that the removal of husk from immature nut (chali) after split opening requires more time than simple peeling of dry nuts. Thus the dry nut dehusking operation does not fully engage two workers.

**Table 1 Observations on dehusking of arecanuts**

No. of operators	output (dehusked nuts) kg	
	Dry*	Tender**
One (A)	56.0	3.5
One (B)	64.0	4.5
Two (A)	93.0	9.6
Two (B)	107.0	11.4

\*average of two trials (8 hr. operation) \*\*average of three trials (1 hr. operation)

## ACKNOWLEDGEMENT

The author expresses his deep sense of gratitude to Shri E.V. Nelliath, Head Agronomy, and Dr N.M. Nayar, Director CPCRI.

## REFERENCES

- 1 Bhat B.N. 1979. Village & P.O. Uppinangady, Puttur, Karnataka. Personal communication.
- 2 George M.P. 1973. Arecanut Shelling Machine. Indian Patent No. 92 (1) (3).
- 3 Bangali Baboo 1981. A manually operated arecanut husker. Research paper presented at the Third Annual Symposium on Plantation Crops. December 10-12, 1980, Cochin (in press).