

# Design, development and performance evaluation of a hand operated maize sheller

**B. ASHWIN KUMAR AND SHAIK HANEEFA BEGUM**

Received : 26.02.2014; Revised : 03.03.2014; Accepted : 16.03.2014

See end of the Paper for authors' affiliation

Correspondence to :

**B. ASHWIN KUMAR**  
Department of Agricultural  
Engineering, Agriculture  
Research Institute, Acharya  
N.G. Ranga Agriculture  
University, HYDERABAD (A.P.)  
INDIA  
Email : ashwin0602@gmail.  
com

■ **ABSTRACT :** The research was conducted on design, development and evaluation of hand operated maize sheller in College of Agricultural Engineering during the year 2012-2013. Maize (*Zea mays* L.) is one of the most important cereal crop in the world agricultural economy. It is called as queen of cereals and king of fodder due to its great importance in human and animal diet. The traditional shelling methods are rubbing the maize cobs against each other, rubbing on bricks or stone and by using iron cylinder consisting of wire mesh inside. These methods are time consuming involves drudgery. In view of this, the study was undertaken to design, development and evaluation of hand operated maize sheller. The maize sheller consisted of a cylinder and a concave. The cylinder made up of high carbon steel of size diameter 21 cm. The cylinder length 86 cm, having beaters which rotates along the cylinder and separates grains from the cobs. While the concave was fabricated using 5 mm size mild steel rods. The length of concave was 91 cm with slotted opening size of 30.3cm×2.5cm. It was observed that for hand operated maize sheller at a moisture content of 12% w.b., and at a feed rate of 130kg/h, the shelling efficiency, unshelled percentage and visible damage was found to be 99.56%, 0.44% and 1.07%, respectively.

■ **KEY WORDS :** Maize sheller, Shelling, Cylinder, Concave

■ **HOW TO CITE THIS PAPER :** Ashwin Kumar, B. and Begum Haneefa, Shaik (2014). Design, development and performance evaluation of a hand operated maize sheller. *Internat. J. Agric. Engg.*, 7(1) : 194-197.