



## Unit 4 – Topic 2

### Husk Sheller for Maize

#### *Maize dehusker-sheller*

The department of Farm Power & Machinery, PAU Ludhiana has developed two types of Maize dehusker cum threshers namely spike tooth type (modified version of wheat thresher) and axial flow type (modified version of sunflower thresher) for threshing the maize along with the husk. It is used for dehusking and shelling of maize cobs simultaneously. It is operated by a PTO of 26.1 kW tractors (Fig. 3). In the spike tooth type sheller, pegs are staggered at varying heights for better shelling efficiency. The spikes are placed in 6 rows with 6 pikes in each row. The sieves have 1.25 cm diameter opening to separate the shelled maize from husk. In axial flow type threshers, pegs are provided on the cylinder and louvers were provided on the upper periphery of the drum to convey the crop to the outlet. Working capacity of sheller is 15-20 q/h. Weight of the machine is about 600-700 kg. Shelling efficiency is about 100% in both the cases and broken grains are maximum up to 2.0%. Dehusking-cum-shelling saves lot of labour in comparison to traditional system. Performance results of the machine are given below.

S. No.	Parameter	Observations
2	Grain straw ratio	4.2
3	M.C. of grain, %	12.1-18.5
4	Cylinder speed, rpm	670-750
5	Broken grain (%)	1-3
6	Un-threshed grain (%)	0.74
7	Threshing efficiency (%)	98-99.5
8	Cleaning efficiency (%)	90-95



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9	Grain output capacity, q/h	4.5-6.5	
10	Blown kernal, %	1-3	
11	Labour requirement, man-h/ha	5	
12	Labour saving in comparison to traditional shelling, %	50-60	



Fig. 3: Maize dehusker-sheller during operation.