

Development of a Cost Effective Two Wheel Tractor Mounted Mobile Maize Sheller for Small Farmers in Bangladesh

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Abstract : Two-wheel tractor (power tiller) is a common tillage tool in Bangladesh agriculture for easy access in fragmented land with affordable price of small farmers. Traditional maize sheller needs to be carried from place to place by hooking with two-wheel tractor (2WT) and set up again for shelling operation which takes longer time for preparation of maize shelling. The mobile maize sheller eliminates the transportation problem and can start shelling operation instantly any place as it is attached together with 2WT. It is counterclockwise rotating cylinder, axial flow type sheller, and grain separated with a frictional force between spike tooth and concave. The maize sheller is attached with nuts and bolts in front of the engine base of 2WT. The operating power of the sheller comes from the fly wheel of the engine of the tractor through "V" belt pulley arrangement. The average shelling capacity of the mobile sheller is 2.0 t/hr, broken kernel 2.2%, and shelling efficiency 97%. The average maize shelling cost is Tk. 0.22/kg and traditional custom hire rate is Tk.1.0/kg, respectively (1 US\$=Tk.78.0). The service provider of the 2WT can transport the mobile maize sheller long distance in operator's seating position. The manufacturers started the fabrication of mobile maize sheller. This mobile maize sheller is also compatible for the other countries where 2WT is available for farming operation.

Keywords : cost effective, mobile maize sheller, maize shelling capacity, small farmers, two wheel tractor

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