



Consolation award

Pepper Thresher

Binoy Sebastian
Idukki, Kerala
Scout: PDS, Kerala

Binoy Sebastian (46) is an Economics graduate and a fabricator. Since childhood, he has had twin interests in machinery and agriculture. With time, he developed an interest in books related to machines. He learnt how to perform calculations related to structural strength/stress analysis (of any machine) by reading reference material online. In his workshop, he keeps improvising on agricultural tools and machinery as required.

Realising that manual threshing of pepper was time-consuming and tedious, Binoy developed a pepper thresher. This machine, made of GI sheet and MS pipes, works on rubbing action to thresh berries (pepper) from stalks/spicks. It has a rotating drum with spiral blades on the periphery and variable threshing clearance with an overload spring

which helps reduce the machine's load, protects it from clogging and reduces power consumption. It is powered by an electric 1hp AC motor having 1440 rpm. The threshing drum has six overhead spiral blades placed at equal distance of 6.8 cm with 26-35 degree with horizontal plane (the best result is observed at 29 degree). Its threshing capacity is 295.85 kg/h, with threshing efficiency of 84.5% (single pass) and power consumption of 0.43 kW. The un-threshed spikes are fed again to machine along with fresh input (or separately) resulting in efficiency close to 95%. The thresher has been validated by the KVK Idukki. For reducing the fatigue of loading operation, a supporting frame is provisioned at the top of the machine, where a gunny bag can be kept so that the labourer need not hold it continuously.

