

**DESIGN AND ANALYSIS OF WORKING  
PRINCIPLES OF SEMI-AUTOMATIC RICE  
THRESHER MACHINE**

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***Abstract***

*In general, the process of threshing rice in the community still uses a lot of traditional methods and conventional machines, where this method has several drawbacks, namely a small work capacity where threshing 5 kg of rice takes  $\pm$  3-5 minutes. many shortcomings and weaknesses including requiring a large amount of manpower, requiring people who have special skills, requiring a long time, designing and manufacturing semi-automatic rice thresher machines with conveyor and blower variations. To find out how efficient the use of conveyors and blowers is in semi-automatic rice thresher machines. This research was conducted based on four stages, the first was field observation, the second was planning and design, the third was assembling the machine, and the last was testing. This semi-automatic rice threshing machine uses 3 shafts, including the threshing shaft which functions to separate the rice on the panicle stalk, then the fan shaft which functions as a sorter for rice that is not contained to be removed through the wasting funnel, and finally there is a conveyor shaft which is attached to the fan. the blower which functions as a rice conductor to the blower fan is then removed through the pipe where the rice comes out. This machine is designed to simplify and speed up the process of threshing rice with a capacity of 300 kg/hour. The threshing shaft rotation is 1109 rpm, the conveyor shaft rotation is 2699 rpm, the sorting fan shaft is 2679 rpm and the engine speed is 3940 rpm. The threshing force is 53900N and the threshing shaft power is 2894.106.5 Watt. The efficiency of the rice threshing machine by varying the conveyor and blower in one shaft can thresh rice well overall, threshing rice takes an average of 37.17 seconds for 3 kg of rice.*

**Keyword** : Paddy, Shaft, Peeling time, conveyor and blower, Capacity