

ABSTRACT

MODIFICATION OF HAMMER TYPE PADDY THRESHER

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Paddy thresher machine had been developed in the previous research was using *hammer* working principle or the machine beat the paddy straw without held by operator. However, the thresher process produced unexpected results. The problem was that the paddy straw agglomerated to form cylinder clot in the thresher chamber and cannot be disposed as it was expected.

The objective of this research was to modify the *hammer type* paddy thresher. The modification was conducted by adding directing channel at the top of threshing chamber ceiling and to modify the paddy straw disposal channel beside the feeder with dimension of 15 cm width and 19 cm height. This method was expected to be able to dispose the paddy straw out of the threshing chamber.

The research methods to use included some stages. They were machine modification design, machine modification, testing results of modification, observation, and data processing. The machine testing was conducted with 4 different treatments with 3 replications where the differences were on the width of paddy straw disposal place manually. These treatments were wide of disposal channel of 15 cm, 13 cm, 11 cm, and 9 cm. Observations were conducted to percentages of threshed paddy grain, unthreshed paddy grain, good threshed paddy grain, damaged threshed paddy grain, duration of threshing and machine capacity per hour.

The testing results showed that the directing channel was able to direct the paddy straw into paddy straw disposal gate. The average of time to thresh 5 kg raw paddy straw was 1,37 minutes with average percentage of good threshed paddy grain was 98,58% and the percentage of threshed paddy grain was 95,83%. Testing this machine was conducted by threshing paddy straw in once feeding continually into the thresher machine. This *hammer type* paddy thresher machine had working capacity of 106,43 kg/hour averagely. This amount was lesser than the *power thresher type* machine working capacity that reached 500-600 kg/hour by using diesel motor of 5,5-6 HP. The *hammer type* paddy thresher machine in the previous research before modification had working capacity of 37 kg/hour.