

**INFLUENCE OF CUTTING HEIGHT AND FORWARD SPEED
ON HEADER LOSSES IN RICE HARVESTING**

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ABSTRACT

This study investigated the header grain losses and quality of the grains with respect to different cutter bar heights and forward speeds. The experiment was conducted at Farm Mechanization Research Centre (FMRC), Anuradhapura in a split plot design with three replicates to investigate the effect of cutting height and forward speed of combine harvester (Model CLAAS C210) on header losses of paddy grains. Header losses were assessed at cutting heights of 10 cm, 15 cm, 20 cm and 25 cm and at three levels of forward speeds such as 2.4, 3.84 and 4.28 km/h.

The results revealed that the cutting heights of 10 cm, 20 cm and 25 cm resulted in greater header losses. The cutting height of 25 cm gave significantly greater header loss of 37.04 kg/ha accompanied by the significantly lowest header losses of 23.66 kg/ha at the cutting heights of 15 cm. The forward speed of 4.28 km/h had significantly highest loss of 42.41 kg/ha, whereas significantly lowest loss of 23.96 kg/ha was associated with the forward speed of 2.4 km/h and at 3.84 km/h which were not significantly different from each other.

The forward speed of 4.28 km/h resulted in significantly greater MOG of 0.0041 kg/ha accompanied by significantly lower MOG of 0.0032 kg/ha at the forward speeds of 2.4 km/h which was not significantly different from the MOG obtained at the forward speed of 3.84 km/h. The cutting height did not have any significant impact on grain damage. However, the forward speed of the harvester had significant effect on decreasing the grain damage. A strong negative relationship between forward speed and the grain damage was observed ($R^2 = 0.99$) at 20 cm and 25 cm

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