

# **PERFORMANCE EVALUATION OF HOLD-ON THRESHERS: A REVIEW**

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# Performance Evaluation of Hold-on Threshers: A Review

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## Abstract

Since the Philippines is an agricultural and tropical country, it makes the best use of potential energy in postharvest procedures like threshing and drying. Traditional threshing methods, on the other hand, revealed flaws in grain quality, high production, drudgery, and labor and operational costs. Therefore, the researcher reviewed articles about rice threshers whether human, electric motor, or renewable energy driven and presented findings that the use of pedal and motorized rice threshers with various machine specifications has a significant effect on increased production, drudgery, and labor and operational costs. Furthermore, statistics showed that using bullock-driven rotary systems led in higher threshing efficiency and production than traditional bullock treading methods. According to both experimental and actual data, using hold-on paddy threshers has a variety of advantages over traditional approaches. This was proved by Sahu & Raheman's (2020) motor driven hold-on type solar energy operated paddy thresher (SEOPT) which achieved a threshing efficiency of 96.83% at a speed of 310 RPM and grain output of 120-130 kg/hr. Also, their IC engine-powered thresher also produced 275 kg/hr. of grain at an efficiency of 96.5% and 370 RPM and their pedal thresher obtained 97.1% efficiency at 45-50 kg/hr. grain output. Moreover, Benrajesh & Rajan (2016) found that their hold-on thresher produced the greatest grain yield of 500-2000 kg/hr. at 500-100 RPM, regardless of threshing efficiency values, notwithstanding the possibility of accidents while operating. According to Amare et al. (2016), paddy threshing is not a priority in some regions since farmers believe that if everyone is all capable of working, there will be substitutes during rest hours. Despite this, improper post-harvest handling can result in grain loss, poor quality, lowering market competitiveness and lesser income.

This may be the case in the Philippines' rural areas, particularly in locations where advanced technology are limited. As a result, farmers with small farmlands and those who live in hilly areas with restricted access to highly mechanized agricultural machinery need the introduction of user-friendly, portable, and inexpensive but high-efficiency hold-on threshers. Fortunately, hold-on type threshers may also be a better option for our researchers when conducting rice postharvest operations experimentations since it was proved that they have a higher output capacity than manual threshing methods and result in less sample mixing and possibly grain losses that are usually experienced in large threshers and combine harvesters.

**Key Words:** threshing efficiency, grain output, pedal threshers, paddy, renewable energy

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