

ABSTRACT

The main objective of this work was to design, fabricate and evaluate a paddy collector. The fabrication involved lay outing, cutting of materials, machining, welding, boring, assembly, sanding, pretesting and painting. The paddy collector was tested under CapSU-Pontevedra PhilRice conditions. The main parameters obtained to answer the objectives of the study were actual and theoretical collecting capacity, collecting efficiency, noise level, quality of grain collected in terms of germination rate and cracked grain, fuel consumption of the machine, scattering loss, and comparison of the performance of paddy collector to manual grain collection in terms of collecting capacity, collecting efficiency, noise level, grain quality, fuel consumption, and cost of the machine. The machine had actual and theoretical collecting capacity of 365.33 kg/hr and 429.65 kg/hr, respectively and the efficiency of a paddy collector was 99.98 percent. It had a noise level of 99.82 db, fuel consumption of 905.78 mL, scattering loss of 0.047% and the rpm was 2358.7. The average augmented cracked grain percentage was 0%. The machine entailed a total annual fixed cost of Php. 9,713.73 per year and a variable cost of 112.98 Php/yr, with recovery period of investment of three months.

Keywords: Design, Fabrication, Evaluation, Paddy Collector, Vacuum