# PERFORMANCE EVALUATION OF ROBOSEEDER FOR WET DIRECT SEEDING OF RICE

**EDEL ROD TOBIAS PEREZ**

An Undergraduate Thesis Submitted to the faculty of the Department of Agricultural and Biosystem Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija Philippines in Partial Fulfillment of the Requirements for the Degree of

**BACHELOR OF SCIENCE IN AGRICULTURAL AND BIOSYSTEM ENGINEERING**
**(AB MACHINERY AND POWER ENGINEERING)**

**JULY 2024**

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This undergraduate's thesis entitled "**PERFORMANCE EVALUATION OF ROBOSEEDER FOR WET DIRECT SEEDING OF RICE**" prepared and submitted by **EDEL ROD T. PEREZ**, in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN AGRICULTURAL AND BIOSYSTEMS ENGINEERING (MAJOR IN AB MACHINERY AND POWER ENGINEERING)**, is hereby accepted:

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## BIOGRAPHICAL SKETCH

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## ABSTRACT

**PEREZ, EDEL ROD T.,** Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **JULY 2024, PERFORMANCE EVALUATION OF ROBOSEEDER FOR WET DIRECT SEEDING OF RICE.**

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Farmers are affected by low yield and production, and improving the rice planting methods can significantly improve the yield, production, and especially the returns. Direct seeding is the cheapest method in rice crop establishment but it produces low yield if it is not done properly. The main goal of the roboseeder is to lower the cost of input while increasing production and yield. The main objective of the study is to evaluate the roboseeder field performance whereas the specific objects to be obtained are in relation to the Seed drum rotational speed, pulse width modulation, and seed discharge. A field evaluation was performed while comparing manual drum seeder and performed simple cost analysis. The laboratory calibration showed a linear relationship for both seed drum rotational speed and PWM and seed drum rotational speed and discharge of seed. The highest rpm recorded was 91 RPM at 255 of PWM level, which has the highest discharge of seed; while the lowest was 4.3 RPM at 35 intervals of PWM, which has the lowest discharge of seed. The uniformity distribution data showed that the average drop is 1.09 grams. The field performance test showed 0.39 ha/hr, 0.32 ha/hr, and 82.1% for TFC, AFC and field efficiency respectively. The cost analysis showed using roboseeder the cost of operation is different between the Manually operated drum seeder and mechanical transplanter the cost of operation per hectare of the roboseeder is 5,371.47 Php/ha while

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