COMPREHENSIVE SEMESTRAL REPORT ON FIELD PRACTICE AT PHILIPPINE CENTER FOR POSTHARVEST DEVELOPMENT AND MECHANIZATION (PHilMech)

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ABSTRACT

RAMOS, CALVIN JOHN L., Department of Agricultural and Biosystems and Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **June 2023, COMPREHENSIVE SEMESTRAL REPORT ON FIELD PRACTICE AT PHILIPPINE CENTER FOR POSTHARVEST DEVELOPMENT AND MECHANIZATION (PHilMech).**

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The field practice was conducted from October 3, 2022 to November 15, 2022 at Philippine Center for Postharvest Development and Mechanization (PHilMech) under Socio-Economic and Policy Research Division (SEPRD) located at CLSU Compound Science City of Muñoz, Nueva Ecija.

The field practice activity 1 aimed to determine the level of mechanization. The specific objectives of this activity were to: 1) identify the machineries used in different rice production activities; and 2) assess the level of mechanization of the selected municipalities.

The field practice activity 2 aimed to verify the computed power requirements of the RPS1, RPS2 and RPS3. The specific objectives of this activity were to: 1) verify the computed power requirements of the RPS's; and 2) identify the electrical components used in the design of the RPS's.

The final activity of the field practice was field visitation which aimed to gather information that allowed the student to experience and be familiar with the projects or activities performed by professional employees. The specific objectives of this activity were to: 1) identify the existing rice processing practices; and 2) enumerate the different types of dryers and milling machines in the selected cooperatives.

The total power from human, draft and mechanical with their specific efficiency factor were used to calculate the rice mechanization index of the municipalities of Tanza, Calauan, Santa Maria and Sta. Marcela. The determination of level of mechanization on selected municipalities in terms of mechanical power used different agricultural machineries which depends on a specific farm operation. For land preparation which includes the usage of hand tractors, power tillers and four-wheel tractors, mechanical transplanter and precision seeder for transplanting, water pumps for irrigation, rice combine and reapers for harvesting, threshers for threshing, mechanical dryers for drying, haulers for transporting and rice mills for milling.

The municipalities of Tanza, Calauan, Santa Maria and Sta. Marcela were classified having a low level of mechanization with a rice mechanization index of 1.38, 0.78, 0.44 and 2.02 respectively.

The given power requirements on different loads under RPS2, RPS2 and RPS3 were validated and compared to the computed values using the formula for KVA rating for three phase transformers. For RPS1, the difference between the given and computed power rating was 113watts. The calculated difference for RPS2 was 104 watts and 87 watts for RPS3.

The field visitation identified the rice processing practices used by the cooperatives visited. Being familiarized with the principle of operation of the fluidized bed dryer was also part of this activity which includes the actual observation on the testing of the machine.

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