

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

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TABLE OF CONTENTS

	PAGE
LIST OF TABLES	ix
LIST OF FIGURES	xi
LIST OF APPENDIX TABLES	xii
LIST OF APPENDIX FIGURES	xiii
ABSTRACT	xiv
INTRODUCTION	1
Background of the Field Practice	1
Objectives of the Field Practice Program	3
Activity 1. Determination of Level of Rice Mechanization	4
Activity 2. Validation of Electrical Components Computation of Rice Processing Systems (RPS): RPS1, RPS2 and RPS3	4
Activity 3. Field Visitation of Rice Processing Systems in Bokod Sulfur Spring Multi-purpose Cooperative, Kabisig Savings and Agri-Development Cooperative and Santiago Amos Credit and Development Cooperative	5
Significance of the Field Practice Program	6
Scope and Limitations of the Field Practice	6
Location and Duration of the Field Practice	7
REVIEW OF RELATED LITERATURE	8
Rice Competitiveness Enhancement Fund Mechanization Program	8
Status of Level of Mechanization in the Philippines	9
Rice Processing System	10
Fluidized Bed Dryer	11
METHODOLOGY	13
Conceptual Framework of Field Practice	13

Activity 1. Determination of Level or Rice Mechanization	14
Identifying the Machineries used in Different Rice Production Activities	14
Analysis of Data	14
Bases of Computations	15
Activity 2. Validation of Electrical Components Computation of Rice Processing Systems (RPS): RPS1, RPS2 and RPS3	16
Verification of Computed Values	16
Identifying the Main Electrical Components of the RPS's	17
Activity 3. Field Visitation	17
Activity 3.1 Rice Processing Systems (RPS)	17
Activity 3.2 Functional Monitoring of Fluidized Bed Dryer	18
RESULTS AND DISCUSSION	19
Activity 1. Determination of Level or Rice Mechanization	19
Inventory of Machineries Used in Different Rice Production Activities	20
Level of Mechanization	20
Activity 2. Validation of Electrical Components Computation of Rice Processing Systems (RPS): RPS1, RPS2 and RPS3	29
Verification of Computed Values	30
Identifying the Main Electrical Components of the RPS's	38
Activity 3. Field Visitation of Rice Processing Systems in Bokod Sulfur Spring Multi-purpose Cooperative, Kabisig Savings and Agri-Development Cooperative and Santiago Amos Credit and Development Cooperative	39
Activity 3.1 Rice Processing Systems (RPS)	40
Batch Recirculating Dryer (BRD)	41
Pavement Drying	41
Milling Strategies	42
Multi-pass Rice Mill	42
Marketing	43
Activity 3.2 Functional Monitoring of Fluidized Bed Dryer	43
Principle of Operation of Fluidized Bed Dryer	44

Technical Features of Fluidized Bed Dryer	44
SUMMARY, CONCLUSION AND RECOMMENDATION	46
Summary	46
Conclusion	48
Recommendation	49
LITERATURE CITED	50
APPENDICES	53
Philippine Center for Postharvest Development and Mechanization (PHilMech)	54
Brief History	54
Mandates	55
Vision	56
Mission	56
PHilMech Programs	56
Socio-Economic and Policy Research Division	56
Organizational Structure of PHilMech	58

LIST OF TABLES

TABLE		PAGE
1	Rice mechanization technologies used in different rice production activities	20
2	Total farm area and no. of respondents in the selected municipalities	21
3	Level of mechanization in the municipality of Tanza, Cavite, hp ha-1	21
4	Level of mechanization in the municipality of Calauan, Laguna, hp ha-1	22
5	Level of mechanization in the municipality of Santa Maria, Isabela, hp ha-1	23
6	Level of mechanization in the municipality of Sta. Marcela, Apayao, hp ha-1	24
7	Level of mechanization in the selected municipalities, hp ha ⁻¹	26
8	Warehouse dimensions and package of technologies of the RPS's	29
9	Given and computed power rating of loads of Rice Mill from RPS1	30
10	Given and computed power rating of loads of two-unit dryers from RPS1	32
11	Given and computed power rating of loads of Rice Mill from RPS2	33
12	Given and computed power rating of loads of two-unit dryers from RPS2	35
13	Given and computed power rating of loads of Rice Mill from RPS3	35
14	Given and computed power rating of loads of three-unit dryers from RPS3	37

15	Main electrical components of the RPS1, RPS2 and RPS3	38
16	Existing dryer of the cooperative visited	40
17	Specifications of batch type recirculating dryer	41
18	Existing rice processing systems of the cooperative visited	42
19	Specifications of different types of multi-pass rice mill	43

LIST OF FIGURES

FIGURE		PAGE
1	Location of the field practice area (PHilMech)	7
2	Pedagogy of field practice at PHilMech	13
3	Rice mechanization index of the selected municipalities, hp ha-1	27
4	Total number of owned machineries used in farm operation on selected municipalities	28
5	Process of fluidized bed dryer	44

LIST OF APPENDIX TABLES

APPENDIX TABLE		PAGE
1	Total no. of machines, average horsepower, and efficiency factor of various operations of rice in Tanza, Cavite	58
2	Total no. of machines, average horsepower, and efficiency factor of various operations of rice in Calauan, Laguna	58
3	Total no. of machines, average horsepower, and efficiency factor of various operations of rice in Santa Maria, Isabela	59
4	Total no. of machines, average horsepower, and efficiency factor of various operations of rice in Sta. Maria, Apayao	59
5	Total no. of farm laborers available on different farm operations on the selected municipalities	60
6	Total no. of animals available on different farm operations on the selected municipalities	60
7	Socio demographic profile of the selected municipalities	71

LIST OF APPENDIX FIGURES

APPENDIX FIGURE		PAGE
1	Organizational Structure of PHilMech	61
2	Field visitation in Kabisig Savings and Agri-Development Cooperative located at Barangay Dalibubon, Jones, Isabela	62
3	Field visitation in Santiago Amos Credit and Development Cooperative (SACDECO) located at Rizal, Santiago City, Isabela	62
4	Field visitation in Bokod Sulfur Spring Multi-Purpose Cooperative located at Bambang, Solano, Nueva Vizcaya	63
5	Solar drying of grains in Kabisig Savings and Agri-Development Cooperative	63
6	Dome Warehouse at SACDECO	64
7	Mechanical dryer in SACDECO	64
8	Recirculating batch type dryer in Bokod Sulfur Spring Multi-purpose Cooperative	65
9	Three-phase transformer in Bokod Sulfur Spring Multi-purpose Cooperative	65
10	Rice mill in SACDECO	66
11	Fluidized bed dryer in Kabisig Savings and Agri-Development Cooperative	66
12	Fluidized bed dryer in SACDECO	67
13	Fluidized bed dryer in Bokod Sulfur Spring Multi-purpose Cooperative	67
14	Actual operation of the fluidized bed dryer	68
15	Fluidized bed dryer control panel	68

16	Milled rice sack bags used in SACDECO	69
17	Final report presentation in PHilMech	69

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 RPS1, 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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