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Research article

Rice Straw Availability and Postharvest Management Practices of Select Rice Farmers in Isabela, Philippines

Jeffrey C. Ginez[*1,2] and Marcelino U. Siladan[2]*

[1]Faculty of General Education and Experiential Learning, Philippine Normal University-Manila, Philippines
[2] Department of Sustainability and Environment, Miriam College, Quezon City, Philippines

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Table 1: Annual Generation of RS in the Various Parts of the World in Metric tons (Mt)

Location of the Study	Annual Generation of RS	Source
South Asia	5 - 6 t	Mandal et al. (2004)
World	About 800 Mt	Dominguez-Escriba and Porcar (2010)
Vietnam	24 Mt	Nguyen et al. (2016)
India	97.19 Mt	Bhattacharyya and Padhi (2019)
Thailand	21.86 Mt	Bhattacharyya and Padhi (2019)
Philippines	10.68 Mt	Bhattacharya and Padhi (2019)
Southeast Asia	100 - 400 Mt	Gummert et al. (2020)
Asia	330 - 470 Mt	Gummert et al. (2020)
World	370 - 520 Mt	Gummert et al. (2020)

*Corresponding author: *Jeffrey C. Ginez*
ginez.jc@pnu.edu.ph
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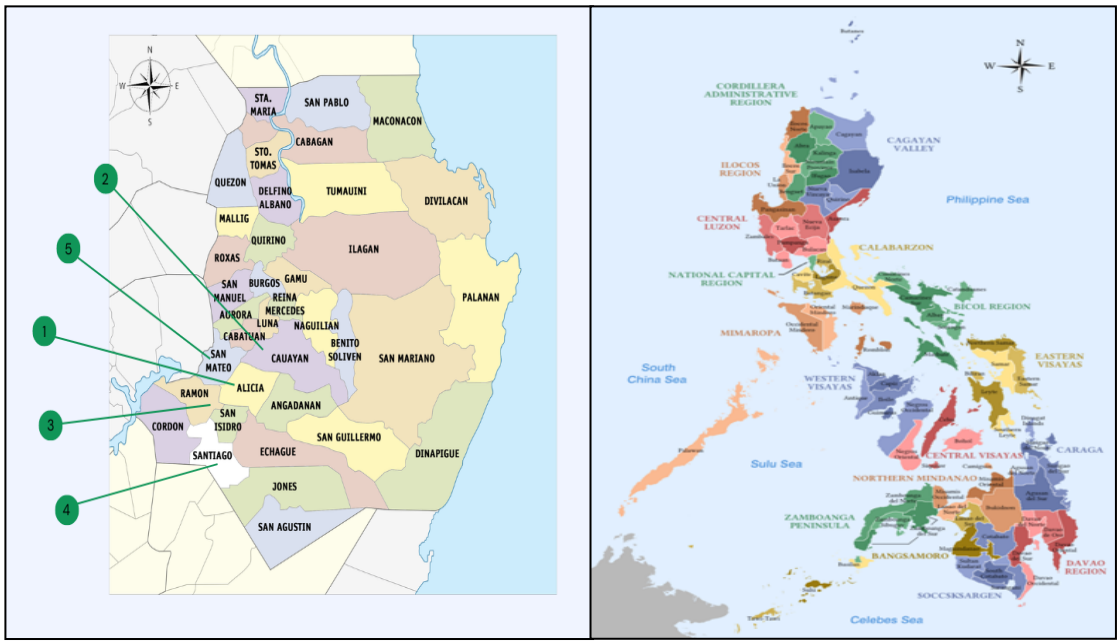

Fig. 1: The Five Study Sites in Isabela (Balingit, 2012) and the Political Map of the Philippines (Wikimedia Foundation, 2024)

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Table 2: Test of Difference on the Mean Rice Straw Biomass Ha-1 Generated when grouped According to the indicated variables

Variable	Source of Variation	F value (F)	P-value (P)	Decision	Interpretation
Category of Land Holdings	2 ha and below 2.1 and above Total	0.52	0.599	Accept Ho	Not Significant
Rice Cultivar	Inbreed Hybrid Total	1.75	0.196	Accept Ho	Not Significant
Type of Soil	Sandy-loamy Sandy Total	6.48	0.005	Reject Ho	Significant
Planting Method	Transplanting Direct Seeding Total	5.01	0.033	Reject Ho	Significant
Quantity of Fertilizer	6-9 sacks 10 and above Total	0.65	0.589	Accept Ho	Not Significant
Frequency of Fertilizer Application	2-3 times 4 times and above Total	0.04	0.989	Accept Ho	Not Significant
Source of Irrigation	NIA Other sources Total	0.81	0.456	Accept Ho	Not Significant
Frequency of Irrigation	4-7 times 8 times and above Total	2.44	0.086	Accept Ho	Not Significant
Quantity of Herbicide	0 - 1 kg 1.01 kg and above Total	0.88	0.426	Accept Ho	Not Significant
Frequency of Herbicide Application	0-1 times 2-3 times Total	0.14	0.714	Accept Ho	Not Significant
Quantity of Insecticide	0 - 1 kg Within Groups Total	2.85	0.075	Accept Ho	Not Significant
Frequency of Insecticide Application	0-1 times 2-3 times Total	2.30	0.100	Accept Ho	Not Significant
Quantity of Fungicide	0 kg - 2 kg Total	0.97	0.424	Accept Ho	Not Significant
Frequency of Fungicide Application	0 times 1-2 times Total	1.42	0.258	Accept Ho	Not Significant
Quantity of Molluscicide	0.50 kg 0.51 kg and above Total	1.47	0.247	Accept Ho	Not Significant
Frequency of Molluscicide Application	1 time 2 times Total	1.24	0.276	Accept Ho	Not Significant
Quantity of Rodenticide	0 kg	1.02	0.321	Accept Ho	Not Significant

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	0.1 kg and above				
	Total				
Frequency of Rodenticide Application	0 times				
	1 time	1.02	0.321	Accept Ho	Not Significant
	Total				
Quantity of Other Pesticides	0 - 0.5 kg				
	0.51 kg and above	0.67	0.522	Accept Ho	Not Significant
	Total				
Frequency of Other Pesticides Application	0 time				
	1 time	0.63	0.538	Accept Ho	Not Significant
	Total				
Cropping System	Monocropping				
	Crop Rotation	0.31	0.580	Accept Ho	Not Significant
	Total				

Table 3: The Postharvest Management Practices of Rice Farmers

Postharvest Activities	Percentage (%)
Straw Incorporation	54.84
Straw Incorporation + Crop Rotation	22.58
Straw Incorporation + Rice Ratooning	12.90
Straw Incorporation + Rice Ratooning + Straw Mushroom Production	3.23
Straw Incorporation + Surface Retention + Straw Mushroom Production	3.23
Straw Incorporation + Rice Ratooning + Surface Retention	3.23
Total	**100.00**

Table 4: Test of Relationship Between Demographic Profile and Postharvest Management Practices

Variable	Chi-square	p	Decision	Interpretation
Age	4.37	0.112	Accept Ho	Not significant
Sex	9.14	0.010	Reject Ho	Significant
Household Size	6.55	0.038	Reject Ho	Significant
Number of Household Working in the Farm	2.59	0.298	Accept Ho	Not significant
Number of Farming Experience	0.88	0.643	Accept Ho	Not significant
Educational Attainment	1.91	0.385	Accept Ho	Not significant
Rice Production Training	5.93	0.028	Reject Ho	Significant
Farm Organization	6.81	0.012	Reject Ho	Significant
Source of Income	0.33	0.960	Accept Ho	Not significant
Household Monthly Income	3.32	0.190	Accept Ho	Not significant

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Table 5: Test of Relationship Between Ownership and Postharvest Management Practices

Variable	Chi-square	df	p	Decision	Interpretation
Land Ownership	5.93	1	0.028	Reject Ho	Significant
Machine Ownership	5.99	1	0.032	Reject Ho	Significant
Animal Ownership	3.15	1	0.146	Accept Ho	Not significant

Table 6: Test of Relationship Between Farm Characteristics and Postharvest Management Practices

Variable	Chi-square	p	Decision	Interpretation
Category of Land Holdings	0.72	0.456	Accept Ho	Not significant
Road Structure	6.90	0.032	Reject Ho	Significant
Type of Soil	6.24	0.044	Reject Ho	Significant
Source of Irrigation	3.78	0.151	Accept Ho	Not significant
Water Availability	3.04	0.219	Accept Ho	Not significant
Rice Cultivar	0.02	0.889	Accept Ho	Not significant

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