

MANAGEMENT STRATEGIES FOR RICE UNDER
LOWLAND RAINFED CONDITION

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A thesis submitted to the Faculty of the Institute of
Graduate Studies, Central Luzon State University,
Munoz, Nueva Ecija, Philippines in partial
fulfillment of the requirements for
the degree of

MASTER OF SCIENCE


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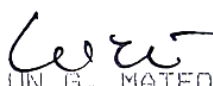
This thesis entitled, MANAGEMENT STRATEGIES FOR RICE UNDER LOWLAND RAINFED CONDITION submitted by ALEJANDRE M. BERNARTE in partial fulfillment of the requirements for the degree of MASTER OF SCIENCE (Crop Science - Agronomy), is hereby accepted.


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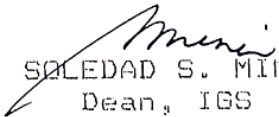

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BIOGRAPHICAL SKETCH

The author is the second of the 10 children, but the eldest son of Mr. Simpruso P. Bernarte and the late Mrs. Bernardina R. Mendoza. He was born on March 29, 1959 in Catayauan, Lal-lo, Cagayan.

He finished his primary education in 1970 at the Naddungan Primary School; his grade V in 1971 at the Nabaccayan Elementary School; and his grade VI in 1972 at the Barbarit Elementary School. Due to financial difficulty, he stopped for one year after graduation in the elementary and helped his parents in the farm. However, his desire to get educated grew each day as he endured the different task in the farm. In 1973, he was sent by his parents to study at the Cagayan Valley Agricultural College and finished his secondary education in 1977. Because of his earnest quest for higher education, he enrolled in the same school now, Cagayan State University, and took up Bachelor of Science in Agriculture major in Agronomy, while working as nursery aide during his off-period. Because of hardwork and dedication to his studies, he was awarded a college scholarship and

academic excellence during that time. He completed his bachelor's degree in 1981.

Immediately after graduation, he was employed as Research Assistant in a joint project of PCARRD and CIADP-APC. He was involved in the packaging and verification of production technologies of different crops and animals in the 28 municipalities of Cagayan. After two years in the project, he was mobilized as coordinator and trainer of training programs for farmer leaders in the province while managing the rice garden project of CIADP-APC.

In 1984, he joined the teaching staff of the Itawes National Agricultural and Technical School and served the school in various capacities. Apart from his major function as a teacher, he was an adviser of the Student Body Organization from 1985 to 1988 and assistant FFP adviser and consultant of the school paper from 1987 to 1989. At the start of 1989, he was selected as Regional Trainer of THE-II by the Department of Education, Culture and Sports in Region 02 and was sent to further his trainings in preparation for the summer 1990 THE-II mass training for teachers in the region. Few days before the mass

training ended, he received a scholarship award from SEAMEO-SEARCA which enabled him to pursue his master's degree major in Crop Science at the Central Luzon State University, Munoz, Nueva Ecija. During his studies at CLSU, although he only obtained a very satisfactory performance in the comprehensive examination, he was the only graduate student in the University who garnered a rating of 90% in Plant Science Research Methods and Statistical Designs during the comprehensive examination.

He is married to the former Miss Nerissa G. de la Cruz, a faculty member of the Itawes National Agricultural and Technical School with whom he is blessed with two gifted daughters - Alma Rose and Mary Grace.

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ABSTRACT

BERNARTE, ALEJANDRE MENDOZA. Institute of Graduate Studies, Central Luzon State University, Muñoz, Nueva Ecija, Philippines. February 1993. MANAGEMENT STRATEGIES FOR RICE UNDER LOWLAND RAINFED CONDITION.

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The agronomic response of rice to various fertilizer levels, seedling ages and seedling rates was investigated during the dry season of 1992 at the lowland rainfed area of the Itawes National Agricultural and Technical School, Tuao, Cagayan.

The area is clay loam with a pH of 6.0. The soil contains 1.5% organic matter, 6 ppm, available phosphorus and 60 ppm, available potassium.

The treatments were composed of five levels of fertilizer (0-0-0, 50-40-40, 100-40-40, 150-40-40 and 200-40-40 kg NPK/ha), three seedling ages (30, 40 and 50 days old) and two seedling rates (4 and 6 seedlings per hill). The experiment was laid out in split-split plot arranged in Randomized Complete Block Design.

Most of the agronomic characteristics of rice were favored by the application of 150-40-40 kg NPK/ha. Plants fertilized with 150-40-40 kg NPK/ha produced the highest grain yield considerably due to heavier grains and lesser unproductive tillers.

Plants transplanted at 50 days old produced the highest grain yield due to more productive tillers and lesser unfilled grains. Moreover, grain yield was significantly higher in plants transplanted at six seedlings/hill due to more productive tillers and lesser unfilled grains.

The combination of fertilizer level, 150-40-40 kg NPK/ha, seedling age of 50 days old and six seedlings per hill indicated better effect in grain yield although most of the yield components were not significantly affected by their combined effects.

The nitrogen content of the straw increased considerably with the application of 200-40-40 kg NPK/ha. However, the level of phosphorus in the soil decreased significantly with this level of fertilizer application.

Plots planted with 50 day old seedlings had higher concentration of nitrogen but lower concentration of phosphorus.

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