DETERMINATION OF OPTIMUM AND MAXIMUM NITROGEN FERTILIZER RATE FOR HYBRID RICE PRODUCTION IN LOWLAND ECOSYSTEM

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An Undergraduate Thesis Manuscript Submitted to the Faculty of the Department of Soil Science, College of Agriculture, 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 AGRICULTURE
(Soil Science)

JANUARY 2020

ACCEPTANCE SHEET

This undergraduate thesis manuscript entitled **"DETERMINATION OF OPTIMUM AND MAXIMUM NITROGEN FERTILIZER RATE FOR HYBRID RICE PRODUCTION IN LOWLAND ECOSYSTEM"** prepared and submitted by **KRISTAL JOY REYES BONDOC** in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN AGRICULTURE (SOIL SCIENCE)**, is hereby accepted:

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BIOGRAPHICAL SKETCH

The researcher, Kristal Joy R. Bondoc, was born on October 12, 1998 at Bubulung Munti, San Ildefonso, Bulacan. She is the third child among the four (4) siblings of Mr. Maximo Bondoc Jr. and Edith Bondoc. She is currently residing at Purok 1, Maligaya, Rizal, Nueva Ecija.

She finished her elementary education in 2011 at Maligaya Elementary School and secondary education in Bicos National High School at Rizal, Nueva Ecija.

In 2015, she enrolled at Central Luzon State University and took up Bachelor of Science degree in Agriculture major in Soil Science. She is a member of Soil Science Society.

ACKNOWLEDGMENT

First and foremost, the researcher would like to express her deepest gratitude and appreciation to our Almighty God Who deserves all the Glory for giving her knowledge, strength, courage, love, inspiration and self-confidence, for guiding and leading in all of her works, to overcome the problems she encountered, for good health and for His continues provision.

To her beloved parents Mr. Maximo and Mrs. Edith Bondoc, for always guiding and supporting her in all aspects throughout her study from the beginning until the end, for the trust, prayers, and for the unconditional love, motivation, encouragement who served as her inspiration to achieve her goals. To her sisters Kristine, Kimberly and younger brother Ariel, for the guidance and help. Likewise, to her relatives who helped in gathering data and harvesting.

To her adviser, Dr. Ariel G. Mactal, for helping and mentoring her from the very start until the end of her thesis study, all the advices he gave that served as guide to fulfill the objectives of the study, all of the corrections and suggestions that improved this thesis study.

To her critic, Dr. Purisima P. Juico, for all of the corrections, suggestions and advices that improved this thesis study.

To her former critic, Florida Garcia, for all of the corrections, suggestions and advices that improved this thesis study.

To all professors of soil science who shared their knowledge and also to the staff of Department of Soil Science.

To her college friends for helping her in the field to gather data for her thesis and for making her college life happy, enjoyable and memorable.

To her churchmates for supporting her emotionally and spiritually, for all the prayers, advices and encouragements to be able to bear her past problems. For correcting the grammars in her paper and also for making her college life happy, enjoyable and memorable.

KRISTAL JOY REYES BONDOC

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ABSTRACT

BONDOC, KRISTAL JOY R., Department of Soil Science, College of Agriculture, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **June 2019, DETERMINATION OF OPTIMUM AND MAXIMUM NITROGEN FERTILIZER RATE FOR HYBRID RICE PRODUCTION IN LOWLAND ECOSYSTEM**

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The study aimed to: (i) determine the response of hybrid rice to increasing levels of N fertilizer and (ii) determine the optimum and maximum rate of N fertilizer for hybrid rice production. The experiment was conducted at the farm of College of Agriculture and was laid out using Randomized Complete Block Design (RCBD). The treatments were Control (No Nitrogen Fertilizer with Recommended Rate of P and K), Recommended Rate of P and K (0-60-90 kg P_2O_5-K_2O/ha) + 50 kg of N/ha, Recommended Rate of P and K (0-60-90 kg P_2O_5-K_2O/ha) + 100 kg of N/ha, Recommended Rate of P and K (0-60-90 kg P_2O_5-K_2O/ha) + 150 kg of N/ha, Recommended Rate of P and K (0-60-90 kg P_2O_5-K_2O/ha) + 200 kg of N/ha and Recommended Rate of P and K (0-60-90 kg P_2O_5-K_2O/ha) + 250 kg of N/ha.

Plant height at 60 DAT and at harvest was significantly improved by increasing levels of N while no significant differences was obtained for number of productive tillers, percent filled grains per panicle, grain yield and dry matter yield.

Inconclusive result on grain yield and other parameter may be due to contamination brought by the use of irrigation water coming directly from the rice paddies which is applied by the recommended level of N. It can be recalled that water accidentally overflowed to the treated plots. Contamination by N fertilizer led to the

increased outcome of the experiment especially the untreated plants which is beyond the control of the researcher.

The R^2 value of 0.617 reflects the closeness of the estimated regression live with the actual observed values. This also means that the increase in yield is accounted for by the increase in the level of Nitrogen.

The maximum yield, as computed is 8,873.3 kg/ha.

Keywords

Hybrid rice, lowland ecosystem, nitrogen fertilizer

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