FORMULATION AND EFFICACY OF 3-IN-1 PELLETED NATURAL FERTILIZER WITH LOWLAND TRANSPLANTED RICE (*Oryza sativa* L.) AS TEST CROP

VENUS PAGADUAN LAGASCA

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 in partial fulfillment of the requirements for the degree

BACHELOR OF SCIENCE IN AGRICULTURE
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An undergraduate thesis manuscript presented to the Faculty of the Department of Soil Science, College of Agriculture, in partial fulfillment of the requirements for the degree Bachelor of Science in Agriculture major in Soil Science

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BIOGRAPHICAL SKETCH

The author was born on the 3rd day of October, 1997 at Science City of Muñoz. She is currently living at Palusapis, Science City of Muñoz, Nueva Ecija. She is the only daughter and the elder child of Mr. Marcelo DC. Lagasca and Mrs. Imelda P. Lagasca. Her sibling, Mark Bryan P. Lagasca, is currently at his 10th Grade at Palusapis Integrated School. Their family depend their source of income in farming.

She took her primary education at Palusapis Elementary School (presently Palusapis Integrated School) and her secondary education at Central Luzon State University (CLSU) Laboratory High School- Palusapis in Science City of Muñoz, Nueva Ecija.

After she graduated in year 2012-2013, she decided to continue her study at CLSU with Bachelor of Science in Agriculture as her course with the influence of her relatives who formerly took this course also. Because of her two years of experience in agriculture, she decided to go on the path of Soil Science.

VENUS P. LAGASCA

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FORMULATION AND EFFICACY OF 3-IN-1 PELLETED NATURAL FERTILIZER WITH LOWLAND TRANSPLANTED RICE (*Oryza sativa* L.) AS TEST CROP[1]

by

VENUS PAGADUAN LAGASCA

ABSTRACT

The study aimed to: (i) formulate a 3-in-1 pelleted natural fertilizer (PNF), (ii) evaluate the efficacy of the formulated PNF as soil organic matter enhancer, nutrient source and in reducing golden apple snail infestation in lowland transplanted rice, and (iii) assess economic benefit through partial budget analysis of its use in lowland transplanted rice production. The experiment was laid out in Randomized Complete Block Design (RCBD) with eight (8) treatments and three replications. The Recommended Rate of Inorganic Fertilizer (RRIF) is 100-60-60 N, P_2O_5, K_2O/ha while 2 t/ha PNF rate was used. The rice variety used was NSIC Rc 216 also known as Tubigan 17.

A 3-in-1 PNF was formulated using ordinary compost, molasses, organic foliar fertilizer and tobacco leaf extract. It has 0.90 % N, 3.53 % P_2O_5, 1.36 % K_2O and a pH of 7.83.

Pure application of 2 t/ha PNF did not improve growth and yield performance of lowland transplanted rice. Furthermore, when applied in combination with full RRIF and half RRIF, no significant increase in yield over the full RRIF was noted. These treatments however (RRIF + 2 t/ha PNF) increased grain yield over the control with 6.12 t/ha and 3.72 t/ha, respectively.

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Partial budget analysis showed that only T7 (RRIF + 2 t/ha PNF) and T8 (Farmer's practice) had a positive net benefit of PhP 1,553.00 and PhP 12,145.00, respectively, with RRIF as the basis.

It is recommended that further study be done using higher rates of application of PNF with 2 t/ha as the reference rate.

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