

**AGRONOMIC CHARACTERISTICS AND GRAIN PHYSICOCHEMICAL  
PROPERTIES OF SPECIAL RICE UNDER CLSU CONDITION**

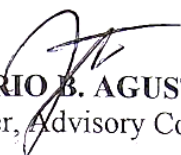
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A master's thesis submitted to the faculty of the Department of Crop Science, College of  
Agriculture, Central Luzon State University, Science City of Muñoz, Nueva Ecija,  
Philippines, in partial fulfillment of the requirements for the degree

**MASTER OF SCIENCE  
(Crop Science)**

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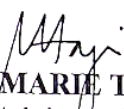
This master's thesis entitled, **AGRONOMIC CHARACTERISTICS AND GRAIN PHYSICOCHEMICAL PROPERTIES OF SPECIAL RICE UNDER CLSU CONDITION**, prepared and submitted by **MARIBELLE PASCUAL ASTEJADA** in partial fulfillment of the requirements for the degree, **MASTER OF SCIENCE (Crop Science-Agronomy)**, is hereby accepted.

  
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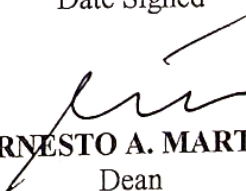
  
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## ABSTRACT

**ASTEJADA, MARIBELLE PASCUAL.** Department of Crop Science, College of Agriculture, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, February 2018, **AGRONOMIC CHARACTERISTICS AND GRAIN PHYSICOCHEMICAL PROPERTIES OF SPECIAL RICE UNDER CLSU CONDITION.**

**Adviser: ROSEMARIE T. TAPIC, PhD**

Six special rice varieties/lines grown during dry season (December 2016 to April 2017) under CLSU condition were evaluated to; (i) determine their agronomic and yield characteristics; (ii) characterize grain physical attributes and milling qualities; (iii) determine cooking characteristics and physicochemical properties; (iv) measure degree of grain pigmentation; and (v) evaluate sensory attributes of raw and cooked rice of introduced special rice. Different varieties/lines were evaluated in Randomized Complete Block Design with three replications.

Results of this study revealed significant variations on different traits like agronomic and yield components among the varieties/lines. Grain yield was highest on Dujali Black (6.2 t/ha), CL-1 (5.9t/ha), Porac-1 (5.8t/ha) and Blonde Red (5.8t/ha). Grain quality characters like physical attributes of rice, CL-1 and CLH10-3-4 produced long-slender type of grains. All the varieties/lines had higher translucent grains. Milling recovery in terms of percent brown rice, milled rice and head rice were highest on Blonde Red. Most of the varieties/lines had intermediate amylose content and gelatinization temperature. High crude protein was also noted on Blonde Red (9.5%), while soft gel consistency was observed from CL-1 variety. Anthocyanin content was

high in Dujali Black and Porac-1 due to their purple pigments in the bran. \*L value of CL-1 variety was found lighter while Dujali Black and Porac-1 were noted to have darker grains. Unpolished Luna Red and Blonde Red obtained the highest positive \*a value, while CL-1 was found to have negative \*a value indicating toward greenness. On the other hand, \*b value of unpolished and polished grains of CL-1 exhibited the highest, indicating towards yellowness.

In terms of sensory attributes for raw rice, CL-1 and CLH10-3-4 were rated as “like” by the sensory evaluators and characterized as aromatic, no-off odor, glossy, slightly tender and tasty. With regard to cooked rice, Dujali Black, Cl-1 and CLH10-3-4 were also “like” by evaluators.

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