DETERMINATION OF GENE CONTROLLING AROMA (*badh2*) AND EVALUATION OF BACTERIAL BLIGHT RESISTANCE (*xa5*) OF RICE IN F2 DERIVED POPULATION

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BIOGRAPHICAL SKETCH

Edelyn M. Galingan was born on February 1,1999 in San Jacinto, Victoria, Tarlac. She was the eldest child of Mr. Joselito B. Galingan and Mrs. Erly M. Galinagan. She has a brother named Joselito B. Galingan Jr. that was recently graduated in Junior High School and now was in his Senior High School.

She finished her elementary education in San Jacinto Elementary School and her secondary education in Victoria National High School-Main. In year 2015, she was admitted in Central Luzon State University, Science City of Muñoz, Nueva Ecija under the course Bachelor of Science in Agriculture. In her second year in college, year 2017, she graduated with the Certificate in Agriculture Science. In the same year, she passed the interview held for the aspiring Crop Science Major specializing in Agronomy. She was also engaged in Society of Crop Science Majors, a college-based organization, where she found a family away from home. From the time being, when the author was completing her Bachelor's Degree, she stayed in Ladies dorm 6, Sampaguita Residence Hall for 5 years.

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ABSTRACT

GALINGAN, EDELYN M., Department of Crop Science, College of Agriculture, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **January 2020, DETERMINATION OF GENE CONTROLING AROMA (*badh2)* AND EVALUATION OF BACTERIAL BLIGHT RESISTANCE (*xa5)* OF RICE IN F_2 DERIVED POPULATION**

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Aromatic rice varieties constitute a small but special group of rice and demand a premium price in local and international market. However, they are often characterized for having undesirable agronomic characteristics. This study was conducted to identify and select breeding lines with aroma (*badh2*) and resistance to bacterial blight (*xa5*) through genotyping and phenotyping. The F_2 population derived from the crosses NSIC Rc222 x MS16 and NSIC Rc222 x Pandan were used in the study. The result of Chi-square analysis for aroma and R-gene *xa5* inheritance in both crosses did not correspond with the expected 1:2:1 Mendelian ratio for a single recessive gene. This prove the recent studies for aroma gene, which suggest that due to the difference of materials used in the study while interaction with the environment is a possible reason to the segregation distortion of R-gene *xa5*. A total of 17 and 42 plants from the cross between Rc222 x MS16 and Rc222 x Pandan respectively, were identified to both *badh2* and *xa5* genes, and resistant against bacterial leaf blight were selected. From this, lines that were selected can be subject into further evaluation immediately, reducing the time utilized in selection process of the breeding programme.

Keywords: Aromatic rice; bacterial leaf blight; betaine aldehyde dehydrogenase2 (*badh2)* gene; R-gene *xa5*

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