

**UNIVERSITY OF THE PHILIPPINES LOS BAÑOS**

**Master of Science in Veterinary Medicine**

**JOSE M. OBEDENCIO JR., DVM**

**ECHOCARDIOGRAPHY AND ABDOMINAL ULTRASONOGRAPHY OF PHILIPPINE BROWN DEER**

(***Rusa marianna* Desmarest)**

**JEZIE A. ACORDA, Ph.D.**

**Adviser**

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Name and signature of the student (Principal Investigator)

**Affirmed by (on behalf of the guidance/advisory committee):**

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Name and signature of the guidance/advisory committee Chair

**ECHOCARDIOGRAPHY AND ABDOMINAL ULTRASONOGRAPHY OF PHILIPPINE BROWN DEER** (***Rusa marianna* Desmarest)**

**JOSE M. OBEDENCIO JR., DVM**

**SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL**

**UNIVERSITY OF THE PHILIPPINES LOS BAÑOS**

**IN PARTIAL FULFILLMENT OF THE**

**REQUIREMENTS FOR THE**

**DEGREE OF**

**MASTER OF SCIENCE**

**(Veterinary Medicine)**

**DECEMBER, 2018**

The thesis attached hereto, entitled “**ECHOCARDIOGRAPHY AND ABDOMINAL ULTRASONOGRAPHY OF PHILIPPINE BROWN DEER (*Rusa marianna* Desmarest)”** prepared and submitted by **JOSE M. OBEDENCIO JR.,** in partial fulfillment of the requirements for the degree of **MASTER OF SCIENCE (VETERINARY MEDICINE)** is hereby accepted.

|  |  |
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| **JEZIE A. ACORDA**  Chair, Guidance Committee  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Date Signed | |

Accepted in partial fulfillment of the requirements for the degree of **MASTER OF SCIENCE (VETERINARY MEDICINE: INTERNAL MEDICINE)**.

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Dean, Graduate School

University of the Philippines |Los Baños

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Date Signed

**BIOGRAPHICAL SKETCH**

**JOSE M. OBEDENCIO JR.**

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**ABSTRACT**

**ELMA S. MANANES.** University of the Philippines Los Baños, May 2017**. Agricultural Innovation System in High and Low Income Class Municipalities in Nueva Ecija, Philippines.**

**Major Professor: Dr. ROWENA DT. BACONGUIS**

Rice is one of the most important crops in the Philippines but there was a limited study regarding the assessment and comparison of agricultural innovation system in rice production of high and low class municipality. Intensive interviews using questionnaires among randomly selected farmers from the municipality of Talavera and Nampicuan, Nueva Ecija were carried out to specifically characterize the components of the agricultural innovation system in rice production of high and low income class municipalities; identify the innovations implemented by the actors from government and private sectors to attain rice production target; analyze constraints in attaining farmer level yield potential and LGU self-sufficiency target; and recommend improvement in the agricultural innovation system. The results of the study highlight the diversity of farmers and the actors associated with the development of rice production and the innovations that have taken place in the municipalities of Talavera and Nampicuan in Nueva Ecija. The difference on the demographic and socio-economic profile among farmers in Talavera (high class municipality) and Nampicuan (low class municipality) explains the yield gap of the two municipalities. Nampicuan, a fifth class municipality had a limited support to its rice farmers due to the lean number of agricultural innovation actors which is due to the limited LGU budget compared to Talavera, first class municipality, agricultural innovation services from government and private sectors among its rice farmers were sustainably delivered and supplied. This study recommends partnership with national agencies, funding agencies and the private sector in the municipality of Nampicuan as well as partnering with other LGU component office such as DENR, DOT, DSWD, etc. in order to complement the lean number of agricultural innovators/actors. On the other hand, in Talavera it is highly recommend to improve their access to information on how to further improve rice production, promote entrepreneurial skills, and improve the perception of the young generation on the potentials of rice production as a business enterprise.

Keywords: Agricultural innovation system, yield potential, innovation, actors

**CHAPTER 1**

**INTRODUCTION`**

**Major Subheading**

**Minor Subsection**

***Paragraph heading.*** In whole papaya, 1-methylcyclopropene has been found effective in slowing the ripening process and hence, extending the fruit’s shelf-life. At greater than 25% of yellowing, 1-MCP can delay the ripening of ‘Sunrise Solo’ papaya without causing abnormal development of organoleptic attributes such as hard lumps in the flesh and uneven yellowing of the skin (Manenoi et al., 2007). However, in ‘Golden’ papaya, 1-MCP treated fruit had inferior quality with the fruit normally ripened (Fabi et al., 2007). This emphasizes the relevance of cultivar as a factor influencing sensitivity to 1-MCP treatment.

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**REVIEW OF LITERATURE CITED**

**Major Subheading**

**Minor Subheading**

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| Table 1. | Amount of change in mean temperature (%) of Mekong River Delta Provinces compared to 1980 - 1990 period based on the medium emission scenario ([MoNRE, 2012](#_ENREF_58)). |

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| **2020** | **2030** | **2040** | **2050** | **2060** | **2070** | **2080** | **2090** | **2100** |
| 1 | Long An | 0.3 | 0.5 | 0.7 | 0.9 | 1.1 | 1.3 | 1.5 | 1.6 | 1.8 |
| 2 | Dong Thap | 0.3 | 0.7 | 1.0 | 1.3 | 1.5 | 1.8 | 2 | 2.2 | 2.4 |
| 3 | Tien Giang | 0.5 | 0.5 | 0.7 | 0.9 | 1.1 | 1.3 | 1.5 | 1.6 | 1.8 |
| 4 | Ben Tre | 0.3 | 0.6 | 0.8 | 1.1 | 0.13 | 1.5 | 1.7 | 1.9 | 2.0 |
| 5 | Vinh Long | 0.4 | 0.5 | 0.7 | 0.9 | 1.0 | 1.2 | 1.4 | 1.5 | 1.6 |
| 6 | Tra Vinh | 0.4 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.8 | 1.9 |
| 7 | An Giang | 0.3 | 0.5 | 0.7 | 0.9 | 1.0 | 1.2 | 1.4 | 1.5 | 1.6 |
| 8 | Can Tho | 0.4 | 0.6 | 0.8 | 1.0 | 1.3 | 1.5 | 1.7 | 1.8 | 2.0 |
| 9 | Hau Giang | 0.4 | 0.5 | 0.8 | 1.0 | 1.2 | 1.4 | 1.6 | 1.7 | 1.9 |
| 10 | Soc Trang | 0.3 | 0.5 | 0.7 | 0.9 | 1.1 | 1.3 | 1.4 | 1.6 | 1.7 |
| 11 | Bac Lieu | 0.4 | 0.6 | 0.8 | 1.1 | 1.3 | 1.5 | 1.7 | 1.8 | 2.0 |
| 12 | Kien Giang | 0.4 | 0.5 | 0.7 | 1.0 | 1.2 | 1.4 | 1.5 | 1.7 | 1.8 |
| 13 | Ca Mau | 0.4 | 0.6 | 0.9 | 1.1 | 1.4 | 1.6 | 1.8 | 2.0 | 2.1 |

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