# CARBON STOCK IN LOWLAND RICE ECOSYSTEM AS AFFECTED BY DIFFERENT FERTILIZER MANAGEMENT STRATEGIES

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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 (SOIL SCIENCE)**

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## BIOGRAPHICAL SKETCH

The author was born on the 17th day of December 1996 in Brgy. Caanawan, San Jose City, Nueva Ecija and grew up with his mother Victoria Caricungan and her family.

He finished his elementary education at St. John's Academy and his secondary education at Central Luzon State University Science High School. Due to the influence of his family and his own personal interest and curiosity, he then pursued a career in agriculture in the same university. On his third year in college, he decided to take up Soil Science as his major field of interest.

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**RENZ VICTOR CARICUNGAN**

# TABLE OF CONTENTS

## LIST OF TABLES

## LIST OF APPENDICES

## LIST OF APPENDIX TABLES

## LIST OF APPENDIX FIGURES

# CARBON STOCK IN LOWLAND RICE ECOSYSTEM AS AFFECTED BY DIFFERENT FERTILIZER MANAGEMENT STRATEGIES[1]

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## ABSTRACT

This study investigate the effects of different fertilizer management strategies on carbon stock, selected soil physico-chemical properties and on growth performance and economics of lowland hybrid rice. The experiment was laid out in Randomized Complete Block Design consisted of five treatments; T1- Control, T2- RRIF (151-38-58 N-$P_2O_5$-$K_2O$ kg/ha), T3- RRIF (120-60-60 N-$P_2O_5$-$K_2O$ kg/ha), T4- RROF (32.65 tons/ha of compost) and T5- 50% RRIF (75.5-19-20 N-$P_2O_5$-$K_2O$ kg/ha) + 50% RROF (16.33 tons/ha of compost) with three replications. Soil sample before fertilizer application and after harvesting were analysed to determine selected soil physico-chemical properties.

The results indicated that application of organic fertilizer improved the soil carbon stock, organic matter, pH, available phosphorus and exchangeable potassium. On the other hand, using inorganic fertilizers alone significantly increase plant height and tiller dynamics of lowland hybrid rice. Grain yield was also increased with the used of inorganic fertilizers but is comparable with the application of compost together with inorganic fertilizer.

Among the fertilizer treatments, using inorganic fertilizers alone at different rates gave the highest net income and return over expenses.

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