DETECTION, SPATIAL TRACKING, DAMAGE AND YIELD ASSESSMENT AND MAPPING OF ANTHRACNOSE-TWISTER OF ONION USING REMOTE SENSING TECHNOLOGY IN SAN JOSE CITY, NUEVA ECIJA

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ACCEPTANCE SHEET

This undergraduate thesis manuscript entitled **"DETECTION, SPATIAL TRACKING, DAMAGE AND YIELD ASSESSMENT AND MAPPING OF ANTHRACNOSE-TWISTER OF ONION USING REMOTE SENSING TECHNOLOGY IN SAN JOSE CITY, NUEVA ECIJA,"** prepared and submitted by **MARY JANE M. DE GUZMAN,** in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN AGRICULTURE (CROP PROTECTION - Plant Pathology)**, is hereby accepted:

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BIOGRAPHICAL SKETCH

Mary Jane M. De Guzman was born on September 3, 1998, lives in Maligaya, Science City of Muñoz, Nueva Ecija. She is the youngest child among the two children of Zoilo D. De Guzman and Perlita M. De Guzman.

She took her primary education at Maligaya Elementary School in Science City of Muñoz, Nueva Ecija, and her secondary education at Sto. Domingo National Trade School.

She entered Central Luzon State University and took up Bachelor of Science in Agriculture major in Crop Protection and Plant Pathology as her area of specialization. Her interest in plants and its diseases lead her to take plant pathology as her specialization and her willingness to fulfill her parents' dream had given her inspiration to take agriculture course and aimed to finish her bachelor's degree.

She was a fortunate recipient of Science City of Muñoz Scholarship. She became a secretary from January 2019 to May 2019 of Pest Management Society, a college-based organization.

Mary Jane likes reading books and nature exploring activities that made her gave so much interest in plants.

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ABSTRACT

DE GUZMAN, MARY JANE M., Department of Crop Protection, College of Agriculture, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **June 2019, DETECTION, SPATIAL TRACKING, DAMAGE AND YIELD ASSESSMENT AND MAPPING OF ANTHRACNOSE-TWISTER OF ONION USING REMOTE SENSING TECHNOLOGY IN SAN JOSE CITY, NUEVA ECIJA**

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Detection, tracking and mapping the geographical distribution of anthracnose-twister disease of onion conducted in San Jose City, Nueva Ecija and carried out in 14 of its barangays from January 2019 to April 2019. Yield was assessed as well the damage and incidence where the progress was determined through a map series.

A total of 77.78 hectares (4.67%) anthracnose-twister incidence over 1,663.12 estimated onion area was surveyed throughout the season. Barangays with high incidence level were detected in Caanawan and Kaliwanagan. High damage level was only detected in Barangay Kaliwanagan affecting a total of 0.81 hectares equivalent to 0.49% of the onion area.

Normalized Difference Vegetation Index (NDVI) images in Barangay Bagong Sikat and Barangay San Juan were acquired using Unmanned Aerial Vehicle (UAV) to detect anthracnose-twister incidence which surveys validated through ground truthing. An estimated 24,058.29 MT of onion was produced in 29 onion-growing Barangays in San Jose City.

Keywords: spatial tracking; mapping of anthracnose-twister incidence; Remote Sensing Technology; San Jose City, Nueva Ecija; Geographical Information System

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