

**SOIL AND CROP SUITABILITY MAPPING OF BARANGAY CATALANACAN,
SCIENCE CITY OF MUÑOZ, NUEVA ECIJA**

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BIOGRAPHICAL SKETCH

The author MARY JOY NIEGOS GUMANGAN was born on 6th day of January 1999, at Barangay Catalanacan, Science City of Muñoz, Nueva Ecija. She is the only child of Mr. Jomar Mamaradlo Gumangan and Mrs. Marichu Saludez Niegos.

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She became the Business Manager of a college based organization the Soil Science Society (SSS).

While studying, the author experienced many challenges, difficulties and struggles in life, but because of hard work and dedication and the guidance of the Almighty God as well as the all out support of her family, friends, she overcame it.

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ABSTRACT

MARY JOY N. GUMANGAN, Department of Soil Science , College of Agriculture, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines. **JANUARY 2020, SOIL AND CROP SUITABILITY MAPPING OF BARANGAY CATALANACAN, SCIENCE CITY OF MUÑOZ**

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Barangay Catalanacan was one of the biggest barangay in the municipality and has a total area of 668.153 hectares and 90 sampling points were collected with soil within agricultural areas with a total area of 540 hectares. This study aimed to re-classify the soil series, re-validate the soil type map based from the reconnaissance map of Science City of Muñoz done by the Bureau of Soil and Water Management (BSWM), produced a re-delineated map using a detailed type of soil survey with a scale of 1:25,000 and lastly to map the current and dominant agricultural crops in the barangay. Map for agricultural land was produced through ground truthing the area with the use of GPS device (Garmin Montana 650). The map was used to generate random sampling points through ArcGIS 10.3.1 software. The generated sampling points was located using GPS device. The soil samples collected at a depth of 0-20 cm and 30-50 cm, at each points was analyzed to determine texture using hydrometer method including other chemical properties using Soil Test Kit (STK). The data gathered from 0-20 cm depth was used to produce re-validated soil type map and crop suitability assessment map while 30-5- cm depth was used to produce re-classified soil series. The re-validation and re-classification study resulted to additional soil types identified namely, San Fabian Clay, Maligaya Clay,

Bantog Clay and San Manuel Clay Loam. Soil types identified were used as a mapping unit for the crop suitability assessment.

The crop suitability for wetland rice is dominantly marginally suitable due to its limitation on rooting condition specifically on soil drainage class as well as nutrient availability and adjusted to moderately suitable by fertilizer application. Suitability rating for onion in most of the area is dominantly highly suitable but has a marginally suitable rating due to its limitations on nutrient retention in some area. However, it can be adjusted to moderately suitable by application of lime.

Keywords: Agricultural Areas in Barangay Catalanacan; Soil Type; Soil Series; Crop Suitability

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