

**GROWTH AND DRY MATTER PARTITIONING OF TOMATO (*Lycopersicon
esculentum* Mill.) APPLIED WITH POTASSIUM NITRATE AND
PACLOBUTRAZOL UNDER WATERLOGGED CONDITION**

JAMES DACUCUS LETCHE

An undergraduate thesis manuscript submitted to the Faculty of the
Department of Crop Science, College of Agriculture,
Central Luzon State University in partial
fulfillment of the requirement
for the degree

**BACHELOR OF SCIENCE IN AGRICULTURE
(Crop Science – Horticulture)**

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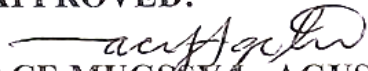
by

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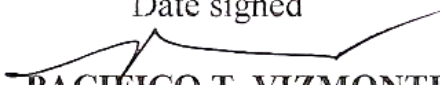
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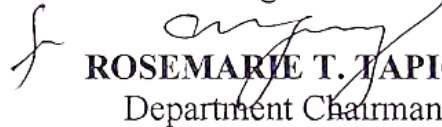
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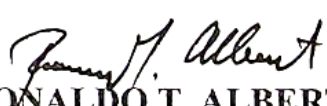
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BIOGRAPHICAL SKETCH

The author, James D. Letche was born on the month of February 5th year nineteen hundred and ninety seven at Red Cross Village, Brgy. Joson, Carranglan, Nueva Ecija. He was the youngest child of Mr. Tony L. Letche and Mrs. Josepina D. Letche. He has two older sisters named Analyn and Jocelyn while his older brother named John and Angel.

He finished his elementary in the year 2009 at Baluarte Elementary School in Brgy. R.A. Padilla, Carranglan, Nueva Ecija while he completed his secondary education in year 2013 at Agricultural Science and Technology School (ASTS) in Central Luzon State University, Science City of Munoz, Nueva Ecija.

To reach his goal and fulfil his dream of being a successful agriculturist, he took up Bachelor of Science in Agriculture major in Crop Science with Horticulture as his field of specialization in Central Luzon State University. To further enhance his skills and knowledge, he conducted an undergraduate thesis entitled “Growth and Dry Matter Partitioning of Tomato (*Lycopersicon esculentum* Mill) Applied with Potassium Nitrate and Paclobutrazol Under Waterlogged Condition”. His stay in the university enabled him to acquire knowledge and skills needed for a better future.

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ABSTRACT

The general objective of this study was to evaluate the effects of exogenous application of paclobutrazol (PBZ) and potassium nitrate (KNO₃) in tomato subjected to different water regimes. Specifically, it aimed to determine the response of tomato under different water regimes as affected by application of PBZ and KNO₃, and identify the optimum concentration of PBZ and KNO₃ that will give highest survival of tomato in different water regimes. The treatments were: water regime as main plots (non-waterlogged, 24 hrs, and 48 hrs waterlogged) and combination of PBZ (0, 250, 500 ppm) and KNO₃ (0%, 4%, 8%) as sub-plot. Treatments were arranged in split plot in RCBD.

Waterlogging caused reduction in % survival of tomato; however there was no further decrease from 24 hrs to 48 hrs waterlogging. This trend was similar to plant height, number of leaves, leaf dry weight, stem dry weight, plant dry weight, and days to flowering. In terms of PGRs, across WR, highest concentration of PBZ w/o KNO₃ (0% KNO₃ + 500 ppm PBZ) had highest % survival. However, when 500 ppm PBZ combined with 4% and 8% KNO₃ there was reduction in % survival. This was also observed in number of adventitious roots wherein 8% KNO₃ + 500 ppm PBZ had the lowest number of adventitious roots. Plants treated with PBZ and KNO₃ were able to maintain partitioning coefficient in stem when subjected to waterlogged condition. Furthermore, there was decreasing trend in % survival at increasing KNO₃ in different water regimes.

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