PACLOBUTRAZOL AND POTASSIUM APPLICATION ON TOMATO (*Lycopersicon esculentum* Mill) SEEDLINGS UNDER DIFFERENT WATERLOGGED DURATIONS

DIANNE CRICHELLE VILORIA PABLO

An undergraduate thesis manuscript submitted to the faculty of the
Department of Crop Science, College of Agriculture,
Central Luzon State University in partial
fullfillment of the requirements
for the degree

BACHELOR OF SCIENCE IN AGRICULTURE
(Crop Science –Horticulture)

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BIOGRAPHICAL SKETCH

The author, Dianne Crichelle Viloria Pablo was born on the 1st day of August 1996 at Malasin, Gen. Hospital, San Jose City, Nueva Ecija. She is the only child of Mr. Federico Dela Cruz Pablo and Mrs. Elsie Viloria Pablo. She was called as "Dianna" most of her family and Dianna "pek" by some of her cousins and close friends.

In 2009 she finished her elementary education at Muñoz North Central School located at Science City of Muñoz, Nueva Ecija and completed her secondary education at Muñoz National High School located at Science City of Muñoz Nueva Ecija.

To fulfill her dreams, she enrolled at Central Luzon State University, Science City of Muñoz, Nueva Ecija and took up Bachelor of Science in Agriculture, major in Crop Science and chose Horticulture as her field of specialization.

During her college days she joined the Christian Brotherhood International (CBI), an organization for all the students who are members of the Church of Christ and Society of Crop Science Majors (SCSM) to gain more friends and boost her social confidence and eventually become business manager in SCSM for Academic Year 2016-2017.

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DIANNE CRICHELLE VILORIA PABLO

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PACLOBUTRAZOL AND POTASSIUM APPLICATION ON TOMATO (*Lycopersicon esculentum* Mill) SEEDLINGS UNDER DIFFERENT WATERLOGGED DURATIONS [1/]

by

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ABSTRACT

This study aimed to determine the effects of paclobutrazol (PBZ) and K_2O application to the growth of tomato seedlings subjected to waterlogged condition and to identify the treatment with highest percent survival and dry matter production under waterlogged condition. The experiment was conducted under screenhouse condition and was laid out using Split-plot design with waterlogging duration as main plot (0-hr, 24-hr, and 48-hr) and combination of PBZ and K_2O as sub-plot (0 ppm PBZ + 0 g K_2O, 0 ppm PBZ + 0.5 g K_2O, 0 ppm PBZ + 1 g K_2O, 5 ppm PBZ + 0 g K_2O, 5 ppm PBZ + 0.5 g K_2O, 5 ppm PBZ + 1 g K_2O, 10 ppm PBZ + 0 g K_2O, 10 ppm PBZ + 0.5 g K_2O, 10 ppm PBZ + 1 g K_2O) replicated three times. Plants were planted in seedling tray and were subjected to different durations of waterlogging using Styrofoam box. Data were gathered from the day of waterlogging imposition (DAWI, 35 DAS) until 21 (DAWI) with weekly interval.

The results of the study showed that the waterlogging treatments were not able to decrease percent survival and dry matter production but increase number and length of adventitious roots. On the other hand, PBZ and K_2O affected plant height, leaf chlorophyll content, number and length of adventitious roots. Specifically: in terms of plant height, across water regimes PBZ has negative effect on plant height and no effect for K_2O; for chlorophyll content, across water regimes, high amount of PBZ and K_2O can increase leaf chlorophyll content; for number of adventitious roots, at 48-hr, PBZ increases number of adventitious roots but K_2O has no effect; and lastly, for length of adventitious roots, under waterlogged condition, high amount of PBZ increases length of adventitious root per plant. The highest percent survival and dry matter production under waterlogged condition was observed in Treatment with 10 ppm PBZ + 1 g K_2O.

[1/]Undergraduate thesis manuscript presented as partial fulfillment of the requirements for graduation with the degree of Bachelor of Science in Agriculture, Major in Crop Science conducted at the Department of Crop Science, Central Luzon State University, Science City of Muñoz, Nueva Ecija, under the supervision of Mr. Ace Mugssy L. Agustin with Research Contribution No. CA-04-17-0019

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