

**EFFECTS OF DIFFERENT PRETREATMENTS ON THE SENSORY
QUALITY OF MICROWAVE OVEN DRIED WHITE
OYSTER MUSHROOM (*Pleurotus florida*)**

MICHELLE HANH C. LE

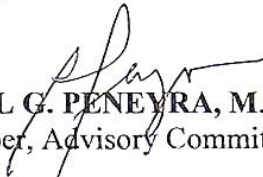
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ACCEPTANCE SHEET

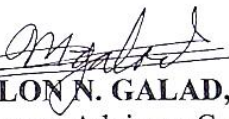
This undergraduate thesis entitled, "EFFECTS OF DIFFERENT PRETREATMENTS ON THE SENSORY QUALITY OF MICROWAVE OVEN DRIED WHITE OYSTER MUSHROOM (*Pleurotus florida*)," prepared and submitted by MICHELLE HANH C. LE, in partial fulfillment of the requirement for the degree of BACHELOR OF SCIENCE IN AGRICULTURAL AND BIOSYSTEMS ENGINEERING (AGRICULTURAL PROCESS ENGINEERING), is hereby approved:


RUEL G. PENEVRA, M.Sc.
Member, Advisory Committee

06/13/19
Date Signed

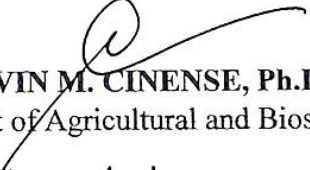

MARLON T. DELOS SANTOS, M.Sc.
Member, Advisory Committee

06/11/19
Date Signed



MARLON N. GALAD, M.Sc.
Chairperson, Advisory Committee

06/11/19
Date Signed

Accepted as partial fulfillment of the requirements for the degree of BACHELOR OF SCIENCE IN AGRICULTURAL AND BIOSYSTEMS ENGINEERING (AGRICULTURAL PROCESS ENGINEERING):


MARVIN M. CINENSE, Ph.D.
Chairperson, Department of Agricultural and Biosystems Engineering

6/13/19
Date Signed


VICTORINO T. TAYLAN, Ph.D.
Dean, College of Engineering

6/13/19
Date Signed

BIOGRAPHICAL SKETCH

The researcher, Michelle Hanh C. Le was born on the 8th day of October year 1997 in Barangay Suklayin, Baler Aurora. She is the youngest among the two children of Mr. Tan Nguyen Le and Mrs. Jesica C. Le. Her brother, who is the eldest, is Minh C. Le. Her father is a Vietnamese and her mother is a Filipina. She was raised here in the Philippines and adapt the Filipino culture.

She finished her elementary education at Biancoan Elementary School. She graduated with high honors as the 8th honorable mention in school year 2009-2010. She completed her secondary level of education on year 2014 at Casiguran National High School. She pursued her tertiary education right after she graduated in high school. She chose Bachelor of Science in Agricultural and Biosystems Engineering as her course with the help of scholarship grants with Department of Agriculture – Agricultural Competitiveness Enhancement Fund (DA-ACEF), CHED – UniFAST’s Tertiary Education Subsidy (TES), and Shell - PhilDev Science and Engineering Scholarship Program.

While she was staying in the university, she joined an organization which is Society of Agricultural Engineering Students – Philippine Society of Agricultural Engineers (SAGES-PSAE). She also joined seminars and conventions related to agricultural engineering such as “21st PSAE-PPG Luzon Convention – Engaging PSAE-PPG Towards Agricultural and Biosystems Engineering for Global Practice,” “Lecture Series in Technopreneurship – Startup: Innovation and Technology Entrepreneurship Forum,” and Hydroponic Seminar: Smart Farming: Engraining for the Future”. She was also a college varsity in Taekwondo for five (5) years.

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ABSTRACT

LE, MICHELLE HANH CORPUZ, Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Munoz , Nueva Ecija Philippines, May 2019. **EFFECTS OF DIFFERENT PRETREATMENTS ON THE SENSORY QUALITY OF MICROWAVE OVEN-DRIED WHITE OYSTER MUSHROOM (*Pleurotus florida*).**

Adviser: **ENGR. MARLON N. GALAD**

Mushroom drying without the application of pretreatments can result to high discoloration of the product after the drying operation. The study focused on determining the effects of sodium metabisulfite, lemon juice, and vinegar as pretreatments on the sensory quality of microwave oven-dried white oyster mushroom. The specific objectives were to determine the drying characteristics of microwave dried mushroom in terms of its moisture content and drying rate; to evaluate the physical characteristics of the dried mushroom in terms of color, taste, aroma, texture, and the overall acceptability; to determine the optimum pretreatment for mushroom; and to perform simple cost analysis.

The drying procedure in the study was done using a microwave oven, Hanabishi brand with HMO-20MDNX1 model. The drying characteristics such as the moisture content and drying rate of the mushroom were determined. Also, the physical attributes of dried mushroom at different pretreatments were studied. The study was arranged following the Completely Randomized Design (CRD). The data were analyzed using Analysis of Variance (ANOVA), and Comparison Among Means (CAM) was done using Least Significant Difference (LSD) at 5% level of significance.

Based on the results of pretesting, the drying time for each replicate was 6 minutes at 700 watts power level. After microwave drying, sodium metabisulfite have the highest moisture content and untreated sample have the lowest. Different pretreatments used in drying mushroom have high significant effects on the moisture content of the dried product. While in drying rate of mushroom, lemon juice showed the highest drying rate. There was no significant difference on the drying rate of dried mushrooms as affected by different pretreatments. For the sensory evaluation of dried mushroom, samples pretreated with sodium metabisulfite have the best results for overall acceptability and degree of likeness in terms of color, aroma, texture, and taste. Based on the statistical analysis there was no significant differences between all the treatments.

Although sodium metabisulfite did not produced the highest drying rate it was considered to be the optimum pretreatment because it produced the lowest color change and had better results in sensory evaluation compared to the samples pretreated with lemon juice and vinegar.

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