

**INFLUENCE OF SWEET BASIL (*Ocimum basilicum* L.) ESSENTIAL
OIL COATING ON SHELF-LIFE QUALITY OF
STRAWBERRY (*Fragaria ananassa* Duch.)**

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(Agricultural and Bioprocess
Engineering)**

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ACCEPTANCE SHEET

This undergraduate thesis entitled, “**INFLUENCE OF SWEET BASIL (*Ocimum basilicum* L.) ESSENTIAL OIL COATING ON SHELF-LIFE QUALITY OF STRAWBERRY (*Fragaria x ananassa*)**” prepared and submitted by **KATE JENELYN D. LEE** in partial fulfilment of the requirements for the degree of **BACHELOR OF SCIENCE IN AGRICULTURAL AND BIOSYSTEMS ENGINEERING (AGRICULTURAL AND BIOPROCESS ENGINEERING)** is hereby approved:


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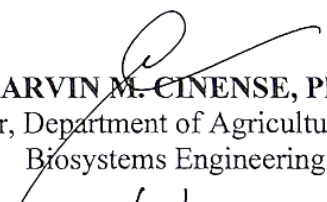
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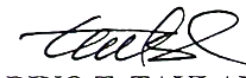
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BIOGRAPHICAL SKETCH

The author was born on the 25th of June 1998, and lives in A. Bonifacio Sur, Llanera, Nueva Ecija. Her parents' names are Mr. Edward O. Lee and Mrs. Jovita D. Lee

The first 6 years of her education was spent in Villa Veniegas Elementary School at Villa Veniegas, Llanera, Nueva Ecija where she was born. She graduated in elementary as honorable mention. She continued her journey at Andres Bonifacio National High School, where she actively participated at various competitions, served as the President of the school organizations, and graduated as valedictorian.

It was her ultimate dream to be an Engineer that's why she took BS in Agricultural Engineering at Central Luzon State University, Science City of Munoz, Nueva Ecija. As she go on in her engineering life, it wasn't easy, especially the subjects because she have no idea what is an Agricultural Engineering all about. But she still manage to deal with all this struggle that is why she still decided to continue pursuing the course. She took Agricultural and Bioprocess Engineering as her major of concentration.

During her 5th year in college, she was blessed to have an opportunity to serve God, as she was given a privilege to teach in their cell group or bible study at Central Luzon State University in front of many students.

Along her journey as an Agricultural and Biosystems engineering student, problems and struggles came along her way but a lot of people were willingly extend their help, share their time and expertise that gave her much inspiration to pursue life excellently.

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TABLE OF CONTENTS

	PAGE
LIST OF TABLES	ix
LIST OF FIGURES	x
APPENDIX TABLES	xii
APPENDIX FIGURES	xix
ABSTRACT	xv
INTRODUCTION	1
Background of the Study	1
Statement of the Problem	3
Objectives of the Study	4
Significance of the Study	4
Scope and Limitation of the Study	5
Time and Place of the Study	5
REVIEW OF LITERATURE	6
Strawberry	6
Morphology of Strawberry	6
Nutritional Profile	7
Maintaining Postharvest Quality of Strawberry	7
Maturity Indices	7
Quality Indices	8
Desired Storage Condition of Strawberry	8
Postharvest Losses of Strawberry	9
Essential Oils	9
Essential oil in Food Industry	10
Essential Oil as Preservatives	10
Perspectives and Limitations in Application of Essential Oils in Food	11
Physical and Chemical Properties of Essential Oils	11

Essential Oil of Basil	12
Chemical Composition and Usage of Basil Oil	13
Applications of Basil Oil in Food Science	13
Food Preservation and Food Safety of Basil Oil	14
Antimicrobial Activities of Basil Oil	14
Postharvest Preservation of Fresh Fruits and Vegetables	15
Waxing Application	16
Sensory Evaluation	16
Marketability for Strawberry	17
Surface Color	17
Total Soluble Solids	18
Potential of Hydrogen	18
Weight Loss	19
Shelf-life Extension	19
METHODOLOGY	20
Conceptualization of the Study	20
Collection and Preparation of Raw Material	20
Coating Application	22
Determination of Shelf-life Quality of the Strawberry	22
Sensory Evaluation	24
Materials and Equipment	25
Statistical Design and Data Analysis	25
Statistical Layout	26
RESULTS AND DISCUSSION	27
Strawberry Quality Parameters	27
Surface Color	27
Total Soluble Solids	29
pH	31
Weight Loss	33
Shelf-life	35
Sensory Parameters	36

SUMMARY, CONCLUSION AND RECOMMENDATION	40
Summary	40
Conclusion	41
Recommendation	42
LITERATURE CITED	43

LIST OF TABLES

TABLE		PAGE
1	Stages of maturity indices of strawberry	8
2	Materials and instrumentations	25
3	Surface color of strawberries at day 8 of storage	27
4	Total soluble solids of strawberries at day 8 of storage	29
5	pH of strawberries at day 8 of storage	31
6	Weight loss of the strawberries at day 8 of storage	33
7	Shelf-life of strawberry	35
8	Mean values for the degree of likeness on the color, flavor, texture, aroma, moistness, sweetness, and overall acceptability of the strawberry treated with and without basil essential oil	36

LIST OF FIGURES

FIGURE		PAGE
1	Morphology of strawberry	8
2	Conceptual framework of the study	21
3	Statistical layout of the study	26
4	Surface color of the strawberries with respect to storage time	28
5	Color chart development of strawberry	29
6	TSS of the strawberries with respect to storage time	31
7	pH of the strawberries with respect to storage time	33
8	Weight loss of the strawberries with respect to storage time	34
9	Radar chart for 9-point hedonic scale evaluation of sensory attributes at all treatments	39

LIST OF APPENDIX TABLE

APPENDIX TABLE		PAGE
1	Surface color of the strawberry samples without basil essential oil treatment stored at a cold storage (8°C)	48
2	Surface color of the strawberry samples with 0.5% basil essential oil treatment stored at a cold storage (8°C)	49
3	Surface color of the strawberry samples with 1% basil essential oil treatment stored at a cold storage (8°C)	50
4	Surface color of the strawberry samples with 1.5% basil essential oil treatment stored at a cold storage (8°C)	51
5	Analysis of variance on the color of the strawberry samples at 8 th day of storage	51
6	Comparison among means on the surface color of the strawberry samples at 8 th day of storage	51
7	Total soluble solids of the strawberry samples without basil essential oil treatment stored at a cold storage (8°C)	52
8	Total soluble solids of the strawberry samples with 0.5% basil essential oil treatment stored at a cold storage (8°C)	52
9	Total soluble solids of the strawberry samples with 1% basil essential oil treatment stored at a cold storage (8°C)	52
10	Total soluble solids of the strawberry samples with 1.5% basil essential oil treatment stored at a cold storage (8°C)	52
11	Analysis of variance on the total soluble solids of the strawberry samples at 8 th day of storage	53
12	Comparison among means on the total soluble solids of the strawberry samples at 8 th day of storage	53

13	pH of the strawberry samples without basil essential oil treatment stored at a cold storage (8°C)	53
14	pH of the strawberry samples with 0.5% basil essential oil treatment stored at a cold storage (8°C)	53
15	pH of the strawberry samples with 1% basil essential oil treatment stored at a cold storage (8°C)	54
16	pH of the strawberry samples with 1.5% basil essential oil treatment stored at a cold storage (8°C)	54
17	Analysis of variance on the pH of the strawberry samples at 8 th day of storage	54
18	Comparison among means on the pH of the strawberry samples at 8 th day of storage	54
19	Weight of the strawberry samples without basil essential oil treatment stored at a cold storage (8°C)	55
20	Weight of the strawberry samples with 0.5% basil essential oil treatment stored at a cold storage (8°C)	55
21	Weight of the strawberry samples with 1% basil essential oil treatment stored at a cold storage (8°C)	55
22	Weight of the strawberry samples with 1.5% basil essential oil treatment stored at a cold storage (8°C)	55
23	Analysis of variance on the weight of the strawberry samples at 8 th day of storage	56
24	Analysis of variance on the shelf-life of the strawberry samples	56
25	Comparison among means on the shelf-life of the strawberry samples	56
26	Mean values for the sensory evaluation of strawberry coated without and with 0.5% basil oil	56

27	Statistical analysis using t-test on the overall acceptability and degree of likeness on the color, flavor, texture, aroma, sweetness and moistness of grapes at different treatment under sensory evaluation	57
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LIST OF APPENDIX FIGURE

APPENDIX FIGURE		PAGE
1	Picking of fresh strawberry sample in La Trinidad, Benguet farm	59
2	Strawberry samples	59
3	Basil essential oil	60
4	Certificate of analysis of basil essential oil	60
5	Coating application of strawberries by means of immersion	61
6	Strawberry stored at 8°C for 8 days	61
7	Measuring the surface color	62
8	Measuring the total soluble solid	62
9	Measuring the pH level	63
10	Strawberry samples for sensory evaluation	63
11	Score card for sensory evaluation of strawberry	64

ABSTRACT

LEE, KATE JENELYN D., Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **JUNE 2019, INFLUENCE OF SWEET BASIL (*Ocimum basilicum* L.) ESSENTIAL OIL COATING ON SHELF-LIFE QUALITY OF STRAWBERRY (*Fragaria ananassa* Duch.)**

Adviser: **MELBA D. DENSON, M.Sc.**

Co-adviser: **ANDRES M. TUATES JR., M.Sc.**

Highly perishable food products can get easily contaminated by spoilage-causing microorganisms during preparation, storage, and distribution. Hence, this study aimed to evaluate the effect of basil essential oil on the shelf-life quality of strawberry.

Freshly harvested strawberries were collected and washed using distilled water then dipped to basil essential oil solution before storing in a refrigerator at temperature of 8°C. The strawberries were coated with basil essential oil at different solutions: T1 (control-no coating); T2 – 0.5% (0.5 mL: 1L distilled H₂O) basil essential oil; T3 – 1% and T4 – 1.5%. Data on surface color, TSS, pH, and weight loss were gathered. The study was laid out in CRD. ANOVA was used to analyze significance among treatment means. CAM was done using LSD at 5% level of significance.

Results revealed that strawberry samples coated with 0.5% basil essential oil gave the most desirable results on the shelf-life quality of the strawberries in terms of surface color, TSS and pH. The slowest change in surface color as well as the highest content on the total soluble solids and lowest pH value of the strawberry samples were obtained at 0.5% basil essential oil coating. However, ANOVA showed that weight loss of the strawberry samples is not significantly affected by the treatments applied. For the shelf-

life of the strawberry, only the treatment with 0.5% basil essential oil coating prolonged its shelf-life up to 4 days when stored in a chiller at 8°C. Furthermore, results on the sensory evaluation of the uncoated and coated (0.5% basil oil) strawberry samples showed that majority of the panelists preferred the coated strawberry in terms of color, flavor, aroma, and sweetness. However, uncoated and coated strawberry samples perceived the same overall acceptability.

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