

**OPTIMIZATION OF MICROWAVE ASSISTED  
PROCESS FOR EXTRACTION OF PEPPER MINT  
ESSENTIAL OIL**

**By,**

**E S ANANTHAKRISHNAN**

**Submitted in partial fulfillment of the  
Requirement for the degree**

**Bachelor of Technology  
In  
Food Engineering and Technology**

**Faculty of Food Engineering and Technology**



**KERALA AGRICULTURAL UNIVERSITY**

**Department of Processing & Food Engineering**

**KELAPPAJI COLLEGE OF AGRICULTURAL ENGINEERING**

**AND TECHNOLOGY**

**TAVANUR – 679573**

**KERALA, INDIA**

**2020**

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## **DECLARATION**

I hereby declare that the thesis entitled “OPTIMIZATION OF MICROWAVE ASSISTED PROCESS FOR EXTRACTION OF PEPPERMINT ESSENTIAL OIL” is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title of any other University or Society.

Place: Tavanur  
Date:

E S ANANTHAKRISHNAN (2016-06-002)

## **CERTIFICATE**

Certified that this project report entitled “OPTIMIZATION OF MICROWAVE ASSISTED PROCESS FOR EXTRACTION OF PEPPERMINT ESSENTIAL OIL” is a record of project done by E S Ananthakrishnan (2016-06-002), under my guidance and supervision and that it has not previously formed the basis for the award of any degree, diploma, associateship, fellowship to them.

Place: Tavanur

Date:

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E S ANANTHAKRISHNAN

**DEDICATED TO ALL**

**FOOD ENGINEERS**

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**LIST OF SYMBOLS AND ABBREVIATIONS**

$^{\circ}\text{C}$	:	Degree Celcius
%	:	Percentage
&	:	And
/	:	Per
D	:	Diameter
et al.	:	and others
etc.	:	Etcetera
GHz	:	Giga Hertz
G	:	Gram
$\text{g.l}^{-1}$	:	gram per litre
$\text{g.mg}^{-1}.\text{day}^{-1}$	:	gram per milli gram per day
H	:	Hour
i.e.	:	that is
IU	:	International Unit
K.C.A.E.T	:	Kelappaji College of Agricultural Engineering and Technology
Kcal	:	kilo calorie
kWh	:	kilo Watt hour
Mg	:	Milli gram
Min	:	Minute (s)
ml	:	Milli Litre

Mm	:	Milli Meter
MT	:	Metric Tonne
RDA	:	Recommended Dietary Allowance
S	:	Second (s)
Sl.	:	Serial
T	:	Tonne
V	:	Volt
W	:	Watt
Wb	:	Wet basis
W.g <sup>-1</sup>	:	Watt per gram
Fig	:	figure
P&FE	:	Process and Food Engineering
No.	:	Number

# **INTRODUCTION**

# **REVIEW OF LITERATURE**

# **MATERIALS AND METHODS**

## **RESULTS AND DISCUSSIONS**



# **SUMMARY AND CONCLUSION**

## **REFERENCES**

# **ABSTRACT**

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