



**Development of Ultrasound-assisted Phytochemical Extraction as an Analytical Method to Evaluate the Drying Technique of Torch Ginger (*Etlingera elatior* (Jack) R.M. Sm) Flower**  
Amila Firdhauzi, Dr. Widiastuti Setyaningsih, S.T.P., M.Sc ; Asst. Prof. Dr. Vatcharee Sechamnunturakit ; Asst. Prof. I  
Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

## THESIS

# DEVELOPMENT OF ULTRASOUND-ASSISTED PHYTOCHEMICAL EXTRACTION AS AN ANALYTICAL METHOD TO EVALUATE THE DRYING TECHNIQUE OF TORCH GINGER (*Etlingera elatior* (Jack) R.M. Sm) FLOWER



**Arranged by:**

**Amila Firdhauzi**

**22/495757/PTP/01919**

**FOOD SCIENCE AND TECHNOLOGY STUDY PROGRAM**  
**FACULTY OF AGRICULTURAL TECHNOLOGY**  
**GADJAH MADA UNIVERSITY**  
**YOGYAKARTA**

**2024**



UNIVERSITAS  
GADJAH MADA

**Development of Ultrasound-assisted Phytochemical Extraction as an Analytical Method to Evaluate the Drying Technique of Torch Ginger (*Etlingera elatior* (Jack) R.M. Sm) Flower**  
Amila Firdhauzi, Dr. Widiastuti Setyaningsih, S.T.P., M.Sc ; Asst. Prof. Dr. Vatcharee Sechamnunturakit ; Asst. Prof. I Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

## THESIS

# DEVELOPMENT OF ULTRASOUND-ASSISTED PHYTOCHEMICAL EXTRACTION AS AN ANALYTICAL METHOD TO EVALUATE THE DRYING TECHNIQUE OF TORCH GINGER (*Etlingera elatior* (Jack) R.M. Sm) FLOWER

To fulfill the requirements for  
Master Degree (S2)  
of Food Science and Technology Program  
Faculty of Agricultural Technology



Arranged by:  
**Amila Firdhauzi**  
**22/495757/PTP/01919**

**GRADUATE PROGRAM  
FACULTY OF AGRICULTURAL TECHNOLOGY  
GADJAH MADA UNIVERSITY  
YOGYAKARTA**

**2024**



UNIVERSITAS  
GADJAH MADA

**Development of Ultrasound-assisted Phytochemical Extraction as an Analytical Method to Evaluate the**

**Drying Technique of Torch Ginger (*Etlingera elatior* (Jack) R.M. Sm) Flower**

Amila Firdhauzi, Dr. Widiastuti Setyaningsih, S.T.P., M.Sc ; Asst. Prof. Dr. Vatcharee Seechamnaturakit ; Asst. Prof. I

Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>

## THESIS

Development of Ultrasound-Assisted Phytochemical Extraction as An Analytical Method to Evaluate the Drying Technique of Torch Ginger (*Etlingera Elatior* (Jack) R.M. Sm) Flower

Presented and compiled by:

Amila Firdhauzi

22/495757/PTP/01919

Presented in front of the examiners

On 27 May 2024

### Board of Examiners

Thesis Supervisor

Dr. Widiastuti Setyaningsih S.T.P., M.Sc

Examiner I

Dr. Manikharda, S.T.P., M.Agr.

Thesis Co-supervisor 1

Asst. Prof. Dr. Vatcharee Seechamnaturakit

Examiner II

Assoc. Prof. Dr. Decha Sermwittayawong

Thesis Co-supervisor 2

Asst. Prof. Dr. Chutha Takahashi Yupanqui

This thesis has been accepted as a requirement  
for completing a master's degree  
in Food Science and Technology Study Program

25 JUN 2024

Date: .....  
Faculty of Agricultural Technology  
Universitas Gadjah Mada  
Dean



Prof. Dr. Ir. Eni Harmayani, M.Sc.



UNIVERSITAS  
GADJAH MADA

**Development of Ultrasound-assisted Phytochemical Extraction as an Analytical Method to Evaluate**

**the**

**Drying Technique of Torch Ginger (*Etlingera elatior* (Jack) R.M. Sm) Flower**

Amila Firdhauzi, Dr. Widiastuti Setyaningsih, S.T.P., M.Sc ; Asst. Prof. Dr. Vatcharee Sechamnunturakit ; Asst. Prof. I

Universitas Gadjah Mada, 2024 | Diunduh dari <http://etd.repository.ugm.ac.id/>