



INFOGRAPHIC

ẢNH HƯỞNG CỦA PHƯƠNG PHÁP LÃO HOÁ ĐẾN THÀNH PHẦN HOÁ LÝ, HOẠT TÍNH KHÁNG OXY HOÁ VÀ HOẠT TÍNH SINH HỌC CỦA GỪNG LÃO HOÁ NHIỆT

Tác giả:

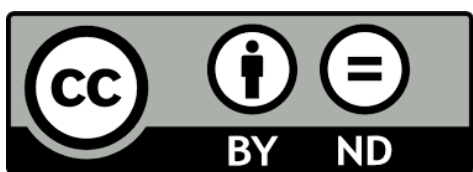
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Năm xuất bản:

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Ảnh hưởng của phương pháp lão hoá đến thành phần hoá lý, hoạt tính kháng oxy hoá và hoạt tính sinh học của gừng lão hoá nhiệt © 2026 bởi **Huỳnh Thị Mỹ Trinh** được cấp phép theo **CC BY-ND 4.0**.

Ginger
Small Change
Big Value

EFFECTS OF THERMAL AGING ON THE PHYSICOCHEMICAL PROPERTIES, ANTIOXIDANT ACTIVITY, AND BIOACTIVITIES OF GINGER

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*From
Traditional Roots
to Healthier
Food Products*

NATURAL
BIOACTIVE
HEALTHY
SUSTAINABLE

1 INTRODUCTION

Ginger (*Zingiber officinale* Roscoe) contains various bioactive compounds such as gingerols, shogaols, and zingerone, which exhibit antioxidant, anti-inflammatory, and antimicrobial activities. Thermal aging can transform these compounds and consequently affect the physicochemical properties, bioactive compounds, and antioxidant activity of ginger. However, the effects of aging method and temperature on Vietnamese ginger remain insufficiently understood. Therefore, this study evaluated two Vietnamese ginger varieties, GINGER SẾ and GINGER TRẦU, under different forms and aging temperatures (70, 80, and 90 °C).

2 RESEARCH OBJECTIVES

- 01 To evaluate the effects of thermal aging methods and temperatures (70, 80, and 90 °C) on the physicochemical properties, bioactive compounds, and antioxidant activity of two Vietnamese ginger varieties, GINGER SẾ and GINGER TRẦU.
- 02 To investigate the potential application of thermally aged ginger in functional food products.

*"Exploring
the value of ginger
through
thermal aging"*

3 MATERIALS

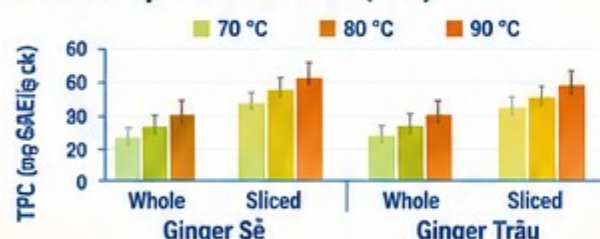
Ginger varieties	Origin	Sample forms	Aging temperatures	Aging time	Honey : ginger
GINGER SẾ GINGER TRẦU	Đắk Lắk, Vietnam 8 months old	Whole rhizome & sliced ginger	70, 80 & 90 °C	Whole: 120 h Sliced: 24 h	1:3 (w/w) for sliced ginger

4 EXPERIMENTAL PROCESS

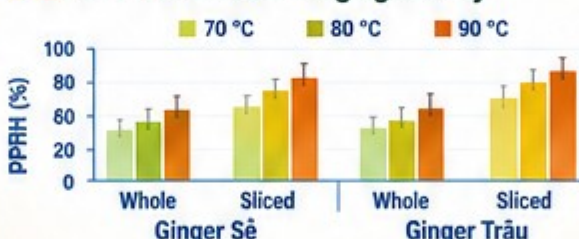


5 RESULTS

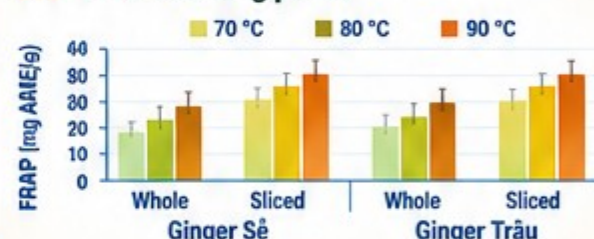
5.1 Total phenolic content (TPC)



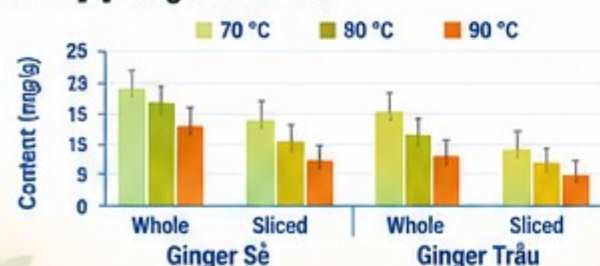
5.2 DPPH radical scavenging activity



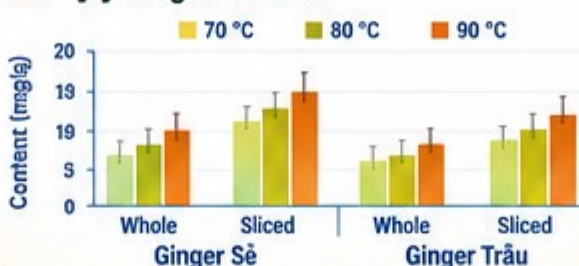
5.3 FRAP reducing power



5.4 [6]-Gingerol content



5.5 [6]-Shogaol content



5.6 Representative samples



6 CONCLUSION

- ✓ **Thermal Aging Impact:** Heat treatment drove the conversion of [6]-gingerol to [6]-shogaol, significantly enhancing overall antioxidant activities (DPPH, ABTS, FRAP).
- ✓ **Sample Form:** Sliced ginger exhibited faster aging kinetics than whole rhizomes.
- ✓ **Perspectives:** Further investigate anti-inflammatory/anti-diabetic mechanisms and scale up for functional food formulation.

7 REFERENCES

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- 2 A. Lara et al., "Composition and Antimicrobial Activity of Ginger (*Zingiber officinale* Roscoe)," *Aust. J. Crop Sci.*, vol. 15, no. 6, pp. 882-889, 2021, doi: 10.21475/ajcs.21.15.06.p3034.

*Natural
Healthier
Happier Future*

*Good Food
Brighter Lives*



SUSTAINABLE
DEVELOPMENT
GOALS