Purification of bromelain-extracted virgin coconut oil through activated carbon and cuttlefish bone: A comparison

By Harimurti, S (Harimurti, S.) [1] ; Maghfiroh, S (Maghfiroh, S.) [1] ; Alvin, RE (Alvin, R. E.) [1] ; Widada, H (Widada, H.) [1] ; Sukamdi, DP (Sukamdi, D. P.) [1] ; Amid, A (Amid, A.) [2]

View Web of Science ResearcherID and ORCID (provided by Clarivate)

Source INTERNATIONAL FOOD RESEARCH JOURNAL

View Journal Impact

Volume: 32 Issue: 2 Page: 400-410

DOI: 10.47836/ifrj.32.2.06

Published APR 2025

Indexed 2025-07-24

Document Type Article

Abstract Enzymatic treatment in producing virgin coconut oil (VCO) may result in impure oil quality due to the manufacturing and storing processes that often cause damage, and decrease quality. VCO produced using pineapple extract as source of enzyme was green, caused by the green colour of the pineapple's leaves, peels, and crowns. Therefore, the present work aimed to improve the quality of bromelain-extracted VCO by purifying and examining its appearance, moisture content, and free fatty acid content. Activated carbon and powdered cuttlefish bone were used as the purifying agent/adsorbent. VCO purification was done in a glass beaker by adding 0.05 g of adsorbent into the 50 mL of VCO, and stirred for 30 min at various temperatures (30, 40, and 50 degrees C) to obtain the best setting for purification. The appearance, moisture content, and free fatty acid content were tested to analyse the quality of VCO before and after purification. The colour, moisture content, and free fatty acid content diminished during purification with both adsorbents. The most substantial reduction was for moisture content. The activated carbon was superior in diminishing colour and free fatty acid content, but the cuttlefish bone exceled in lowering moisture content. Double

View Related Records

How does this document's citation performance compare to peers?

Open comparison metrics panel

Data is from InCites Benchmarking & Analytics

Use in Web of Science

2 Last 180 Days

2 Since 2013

Learn more →

steps purification may be needed to improve the overall quality of bromelain-extracted VCO. (c) All Rights Reserved

Keywords

Author Keywords: VCO; pineapple extracted-enzyme; adsorbent; appearance; moisture content; acid number

Keywords Plus: DECOLORIZATION; EMULSION; REMOVAL

Author Information

Corresponding Address: Harimurti, S. (corresponding author)

Univ Muhammadiyah Yogyakarta, Fac Med & Hlth Sci, Sch Pharm, Jl Brawijaya, Bantul 55183, Yogyakarta, Indonesia

E-mail Addresses :

sabtanti@umy.ac.id

Addresses :

[1] Univ Muhammadiyah Yogyakarta, Fac Med & Hlth Sci, Sch Pharm, Jl Brawijaya, Bantul 55183, Yogyakarta, Indonesia

[2] Int Islamic Univ, Int Inst Halal Res & Training, Gombak 50728, Kuala Lumpur, Malaysia

E-mail Addresses :

sabtanti@umy.ac.id

Categories/ Classification

Research Areas: Food Science & Technology

Citation Topics : 1 Clinical & Life Sciences › 1.68 Lipids › 1.68.621 Virgin Olive Oil

Sustainable Development Goals: 03 Good Health and Well-being

Web of Science Categories

Food Science & Technology

This record is from:

Web of Science Core Collection

- Science Citation Index Expanded (SCI-EXPANDED)

Suggest a correction

If you would like to improve the quality of the data in this record, please **Suggest a correction**

Funding

View funding text

Funding agency	Grant number
Universitas Muhammadiyah Yogyakarta	56/R-LRI/XII/2022
	1687.73/PMI/I.3/D/2022

+ See more data fields

Journal information

INTERNATIONAL FOOD RESEARCH JOURNAL

← View Journal Impact

ISSN 1985-4668

eISSN 2231-7546

Current Publisher UNIV PUTRA MALAYSIA PRESS, SERDANG, SELANGOR 00000, MALAYSIA

1
Journal Impact Factor ™ (2024)

0.16
Journal Citation

Table of Contents	Current Contents Connect	Indicator ™ (2024)
Research Areas	Food Science & Technology	
Web of Science Categories	Food Science & Technology	

48 Cited References

View as set of results

Showing 30 of 48 *(from Web of Science Core Collection)*