KOMBINASI KRIM KULIT KOPI DAN NILAM 1% FRAKSI RINGAN SEBAGAI PELEMBAB

Inovasi Pelembap Berbasis Ekstrak Kulit Kopi Arabika Gayo dan Minyak Nilam Aceh yang Aman, Efektif, dan Bernilai Tambah Tinggi dari Sumber Daya Lokal

Nomor Permohonan Paten: S00202507413

Dr. dr. Wahyu Lestari, Sp. D.V.E., FINSDV, FAADV

Latar Belakang

<10%

Batas Kritis Hidrasi Kulit

Xerosis cutis: Batas kritis kandungan air pada stratum corneum.

Bahaya Pelembab Sintetis

Penggunaan zat kimia non-alami sering memicu reaksi iritasi dan alergi

Optimalisasi Komoditas Lokal

Potensi kopi Arabika Gayo dan Nilam Aceh kaya akan senyawa alami penangkal radikal bebas

Cara Kerja Invensi

EKSTRAK KULIT KOPI ARABIKA GAYO

ANTIOKSIDAN KUAT

MINYAK NILAM 1% FRAKSI RINGAN

ANTIINFLAMASI & REGENERASI

SINERGI FORMULA AKTIF

MENCEGAH PENGUAPAN AIR KULIT
(TRANSEPIDERMAL WATER LOSS)

Keunggulan Kompetitif

Produk Existing	Krim Invensi
Dominan bahan sintetis	Berbasis bahan alam
Bahan baku konvensional	Kulit kopi Arabika Gayo + nilam Aceh
Fokus pelembapan	Pelembapan + antioksidan + antiinflamasi
Nilai tambah lokal terbatas	Memanfaatkan komoditas Aceh



Krim Kulit Kopi Arabika Gayo dan Nilam Aceh

Status Pengembangan

PROTOTIPE

UJI LABORATORIUM

PATCH TEST

UJI KLINIS RCT

KESIAPAN KOMERSIALISASI

Tingkat Kesiapan Teknologi

TKT 7 –
PROTOTIPE TERUJI PADA LINGKUNGAN NYATA

Validasi Ilmiah & Luaran Publikasi



F1000Research

F1000Research 2022, 11:220 Last updated: 20 MAY 2022

Check for updates

SYSTEMATIC REVIEW

Coffee by-products as the source of antioxidants: a systematic review [version 1; peer review: 2 approved]

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Abstract

Background: Solid waste from coffee depulping process threatens the organism in environment as it produces organic pollutants. Evidence suggested that coffee by-product could valorize owing to its potential as antioxidant sources. The aim of this systematic review was to evaluate antioxidant activity of coffee by-products obtained from different coffee variants (arabica and robusta) and processing methods.
Methods: The systematic review was conducted as of May 29, 2021 for records published within the last ten years (2011–2021) using seven databases: Embase, Medline, BMJ, Web of Science, Science Direct, Cochrane, and PubMed. Data on type of specimen, processing methods, and antioxidant activities were collected based on PRISMA guidelines.
Results: Our data suggested that aqueous extract was found to be the most common processing method used to obtain the antioxidant

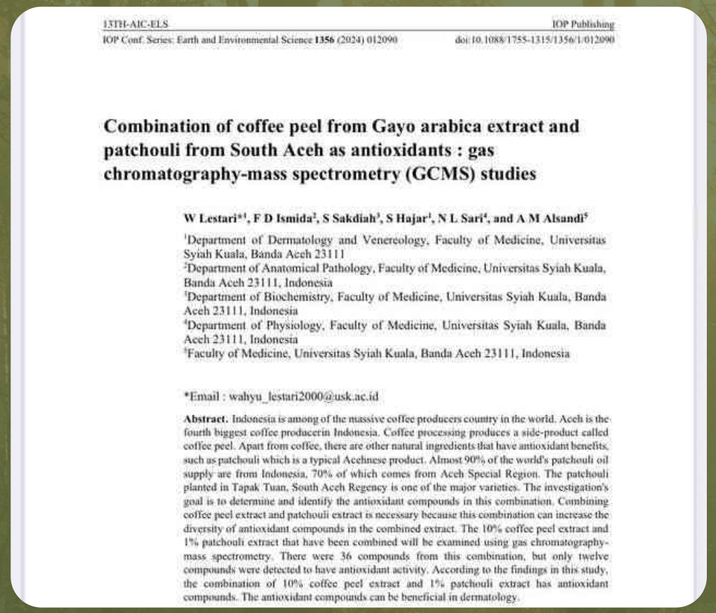
Open Peer Review

Approval Status ✓ ✓

	1	2
version 1 23 Feb 2022	✓ view	✓ view

1. **Emil Salim**, Universitas Sumatera Utara, North Sumatera, Indonesia
2. **Ghodratollah Panahi**, Tehran University of Medical Sciences, Tehran, Iran

Any reports and responses or comments on the article can be found at the end of the article.



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Combination of coffee peel from Gayo arabica extract and patchouli from South Aceh as antioxidants : gas chromatography-mass spectrometry (GCMS) studies

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Abstract. Indonesia is among of the massive coffee producers country in the world. Aceh is the fourth biggest coffee producerin Indonesia. Coffee processing produces a side-product called coffee peel. Apart from coffee, there are other natural ingredients that have antioxidant benefits, such as patchouli which is a typical Acehnese product. Almost 90% of the world's patchouli oil supply are from Indonesia, 70% of which comes from Aceh Special Region. The patchouli planted in Tapak Tuan, South Aceh Regency is one of the major varieties. The investigation's goal is to determine and identify the antioxidant compounds in this combination. Combining coffee peel extract and patchouli extract is necessary because this combination can increase the diversity of antioxidant compounds in the combined extract. The 10% coffee peel extract and 1% patchouli extract that have been combined will be examined using gas chromatography-mass spectrometry. There were 36 compounds from this combination, but only twelve compounds were detected to have antioxidant activity. According to the findings in this study, the combination of 10% coffee peel extract and 1% patchouli extract has antioxidant compounds. The antioxidant compounds can be beneficial in dermatology.



Short Communication

narra j

Short Communication

Safety evaluation and effects of cascara pulp Gayo Arabica coffee cream as anti-photoaging in animal model

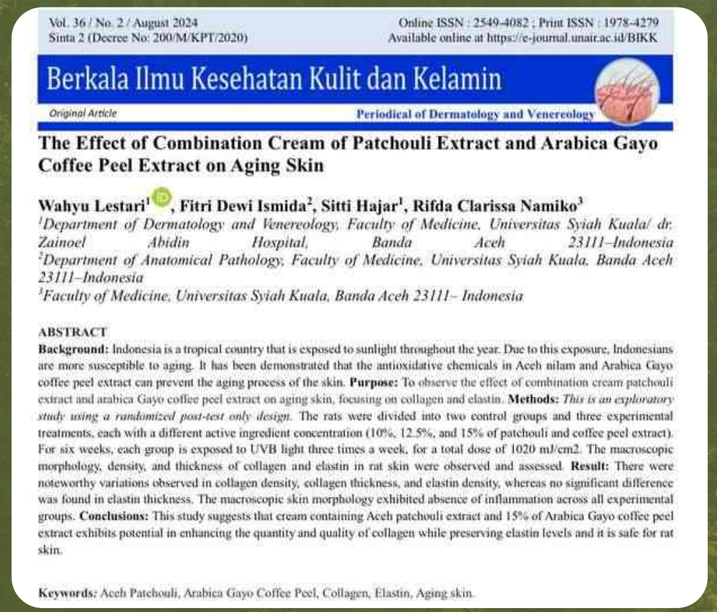
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Abstract

Prolonged sunlight and ultraviolet (UV) exposure causes premature skin aging called photoaging and coffee-derived topical antioxidants may help to reduce this process. Since a significant amount of antioxidant-rich cascara pulp are wasted in coffee processing, this study aimed to evaluate the safety of cascara extract cream of Gayo Arabica coffee pulp (CECGACP) as anti-photoaging in male Wistar rats (*Rattus norvegicus*) by assessing the skin primary irritation index (PII), skin macroscopic changes and the level of tumor necrosis factor-alpha (TNF-α). Twenty-five rats were randomly divided into five different groups: negative control (base cream only), positive control containing L-ascorbic acid 3%, and three treatment groups treated with cream containing 5%, 7.5% and 10% of CECGACP. The CECGACP was extracted, formulated into cream as a topical treatment and applied on the backs of the rats two times a day, once before the UV exposure and four hours after the exposure. After four weeks, the skins were macroscopically examined, and the TNF-α levels were measured. The PII was assessed after applying the cream 24 hours before UX exposure. Our data suggested that CECGACP was considered safe because there were no erythema and edema formation on the skin of the rats with PII score of 0 (classified as no irritation or negligible). After UV exposure, all rats had visible wrinkles and erythema on the skin in particular in the first week. After administration of CECGACP, both wrinkles and erythema were decreased. The levels of TNF-α varied from 0.15±0.02



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Berkala Ilmu Kesehatan Kulit dan Kelamin

Original Article

Periodical of Dermatology and Venereology

The Effect of Combination Cream of Patchouli Extract and Arabica Gayo Coffee Peel Extract on Aging Skin

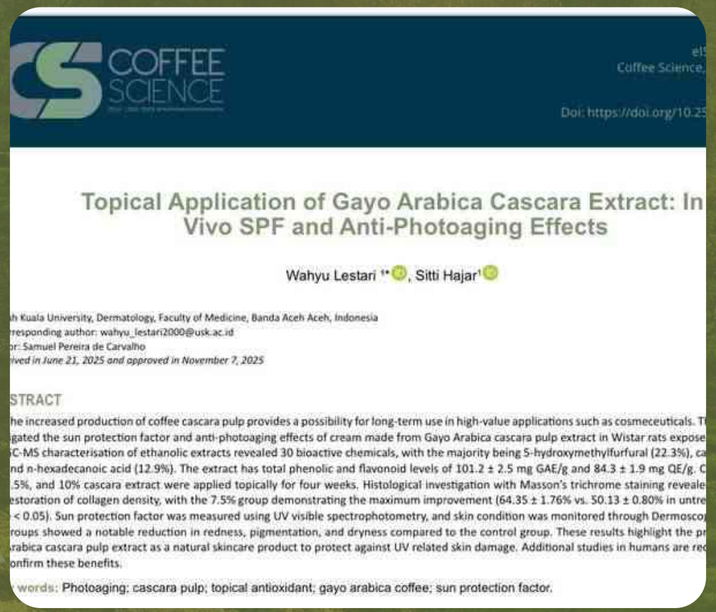
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ABSTRACT

Background: Indonesia is a tropical country that is exposed to sunlight throughout the year. Due to this exposure, Indonesians are more susceptible to aging. It has been demonstrated that the antioxidative chemicals in Aceh nilam and Arabica Gayo coffee peel extract can prevent the aging process of the skin. **Purpose:** To observe the effect of combination cream patchouli extract and arabica Gayo coffee peel extract on aging skin, focusing on collagen and elastin. **Methods:** *This is an exploratory study using a randomized post-test only design.* The rats were divided into two control groups and three experimental treatments, each with a different active ingredient concentration (10%, 12.5%, and 15% of patchouli and coffee peel extract). For six weeks, each group is exposed to UVB light three times a week, for a total dose of 1020 ml/cm2. The macroscopic morphology, density, and thickness of collagen and elastin in rat skin were observed and assessed. **Result:** There were noteworthy variations observed in collagen density, collagen thickness, and elastin density, whereas no significant difference was found in elastin thickness. The macroscopic skin morphology exhibited absence of inflammation across all experimental groups. **Conclusions:** This study suggests that cream containing Aceh patchouli extract and 15% of Arabica Gayo coffee peel extract exhibits potential in enhancing the quantity and quality of collagen while preserving elastin levels and it is safe for rat skin.

Keywords: Aceh Patchouli, Arabica Gayo Coffee Peel, Collagen, Elastin, Aging skin.



COFFEE SCIENCE

Coffee Science.

Doi: https://doi.org/10.25

Topical Application of Gayo Arabica Cascara Extract: In Vivo SPF and Anti-Photoaging Effects

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ived in June 21, 2025 and approved in November 7, 2025

STRACT

he increased production of coffee cascara pulp provides a possibility for long-term use in high-value applications such as cosmeceuticals. T
gated the sun protection factor and anti-photoaging effects of cream made from Gayo Arabica cascara pulp extract in Wistar rats expose
C-MS characterisation of ethanolic extracts revealed 30 bioactive chemicals, with the majority being 5-hydroxymethylfurfural (22.3%), ca
nd n-hexadecanoic acid (12.9%). The extract has total phenolic and flavonoid levels of 101.2 ± 2.5 mg GAE/g and 84.3 ± 1.9 mg QE/g. C
.5%, and 10% cascara extract were applied topically for four weeks. Histological investigation with Masson's trichrome staining revealed
estoration of collagen density, with the 7.5% group demonstrating the maximum improvement (64.35 ± 1.76% vs. 50.13 ± 0.80% in untre
< 0.05). Sun protection factor was measured using UV visible spectrophotometry, and skin condition was monitored through Dermosco
roups showed a notable reduction in redness, pigmentation, and dryness compared to the control group. These results highlight the pr
rabica cascara pulp extract as a natural skincare product to protect against UV related skin damage. Additional studies in humans are re
onfirm these benefits.

words: Photoaging; cascara pulp; topical antioxidant; gayo arabica coffee; sun protection factor.



Dermatologic Therapy

WILEY

RESEARCH ARTICLE OPEN ACCESS

Efficacy of a Coffee Peel and Patchouli Oil Combination Cream Compared With Urea in Xerosis Cutis: A Double-Blind Randomized Controlled Trial

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Keywords: coffee pulp extract | dry skin | moisturizer | patchouli oil | randomized controlled trial | skin hydration | transepidermal water loss (TEWL) | xerosis cutis

ABSTRACT

Background: Xerosis cutis is a common skin disorder associated with impaired epidermal barrier function, reduced hydration, and symptoms such as scaling and pruritus. Plant-based topical therapies are increasingly explored as alternatives to conventional moisturizers.
Methods: In this double-blind randomized controlled trial, 70 patients with mild-to-severe xerosis cutis were randomized to receive either a combination cream containing Gayo Arabica coffee bean peel extract and Acehnese patchouli oil (KKAN) or a 10% urea cream. Treatments were applied twice daily for 4 weeks, with follow-up assessments conducted up to Week 6. Safety was evaluated by patch testing. Efficacy was assessed using transepidermal water loss (TEWL), skin hydration, Overall Dry Skin Score (ODSS), itch intensity (VAS), Dermatology Life Quality Index (DLQI), and dermoscopic scaling.
Results: Both treatments were well tolerated, and baseline characteristics were comparable. The KKAN group showed a significantly greater reduction in TEWL at Week 2. Skin hydration was significantly higher in the KKAN group at Week 4. Im-

Sasaran Pengguna

- Pasien kulit kering kronis *(Xerosis cutis)*
- Lansia yang mengalami penurunan hidrasi kulit alami
- Konsumen kosmetik

Sektor Industri

- **Industri Kosmesetikal *(Cosmeceuticals)***
- **Industri Obat Tradisional / Herbal**
- **Klinik Estetika & Dermatologi**

Dampak Strategis Invensi

Ekonomi

Meningkatkan nilai jual limbah kulit kopi Arabika Gayo dan memperkuat *brand* Nilam Aceh di pasar global



Sosial

Pemberdayaan petani kopi dan nilam lokal serta peningkatan kualitas hidup pasien dengan kondisi kulit kering



Lingkungan

Pengurangan limbah pertanian melalui konsep *Upcycling* menuju industri kosmetik berkelanjutan.



Dampak Strategis Invensi

Model Komersialisasi	Implementasi
Lisensi Teknologi	Transfer formula kepada industri kosmetik dan *personal care*
Kerja Sama Industri	Produksi dan distribusi melalui mitra industri
Pengembangan Merek Mandiri	Pengembangan dan pemasaran produk berbasis

Tantangan Implementasi



Scale-up produksi dari laboratorium ke skala industri



Registrasi dan pemenuhan regulasi produk kosmetik



Standardisasi kualitas bahan baku kulit kopi Gayo dan nilam Aceh

Dukungan & Kolaborasi yang Dibutuhkan

Area Kolaborasi	Kebutuhan
Mitra Industri Kosmetik	*Scale-up* produksi dan hilirisasi produk
Regulasi & Sertifikasi	Registrasi BPOM dan legalitas produk
Mitra Distribusi	Pemasaran dan penetrasi pasar