



Scoping Review Kratom (*Mitragyna speciosa*)

**BADAN KEBIJAKAN PEMBANGUNAN KESEHATAN
KEMENTERIAN KESEHATAN RI
2023**

Outline

- Ringkasan hasil penelitian BRIN
- Penggolongan narkotika di Indonesia
- *Scoping review* kratom
- Upaya yang Telah Dilakukan Indonesia Terkait Kratom
- Penelitian Terkait Khasiat Obat Tanaman Kratom
- Efek Polifarmasi Konsumsi Kratom
- Pakar kratom

Ringkasan hasil penelitian BRIN

- November 2022 s/d Desember 2023.
- Ringkasan hasil penelitian dari 3 kelompok penelitian :

Kelompok	Fitokimia	Uji Praklinik	Penelitian Komunitas
Parameter			
Ruang lingkup	Karakterisasi senyawa aktif	Uji ketergantungan fisik dan mikrodialisis dopamine (secara in vivo)	Observasi klinis pada komunitas
Sampel	Daun kratom dari 7 lokasi	Tikus (N = 35, dalam 5 kelompok dosis @7 ekor)	Pengguna rebusan daun kratom (N = 75)
Hasil	<ul style="list-style-type: none">- Mengandung senyawa aktif mitraginin.- Kadar dalam pelarut organik 3-5x dibandingkan dalam air panas.	<p>Uji Ketergantungan fisik:</p> <ul style="list-style-type: none">- Ekstrak air dosis rendah → efek sedasi- Ekstrak air dosis tinggi → peningkatan aktivitas- Penggunaan 28 hari dan penghentian 7 hari → tidak menunjukkan ketergantungan dan gejala toksik pada organ. <p>Studi mikrodialisis dopamine belum selesai</p>	<ul style="list-style-type: none">- Konsumsi setiap hari tidak menimbulkan efek negatif.- Putus minum kratom tidak menimbulkan efek berarti.- Ragam durasi dan takaran konsumsi kratom mempengaruhi pola tidur, nafsu makan (belum dapat dijelaskan).- Dapat mengurangi nyeri.

Penggolongan Narkotika di Indonesia

- Berdasarkan UU No.35 Tahun 2009 tentang Narkotika

Golongan	Golongan I	Golongan II	Golongan III
Parameter			
Khasiat Pengobatan	Dilarang	Berkhasiat obat	Berkhasiat obat
Pengembangan IPTEK	Dapat digunakan	Dapat digunakan	Banyak digunakan
Terapi pengobatan	Tidak digunakan	Digunakan sebagai pilihan terakhir	Banyak digunakan
Potensi Ketergantungan	Sangat tinggi	Tinggi	Ringan
Contoh	Opium, kokain, tanaman ganja, heroin	Morfin, asetilmetadol, dietilambutena, metadona	Kodein, polkodina, propiram, buprenorfina

Scoping review

Batas tahun publikasi: 2013-2023

Database yang digunakan: PubMed, Google Scholar, WorldCat Search

Kriteria inklusi: Original research, Bahasa Inggris, kratom di Indonesia, Q1.

MeSH terms	Hasil Pencarian Artikel		
	Pubmed	GS	Worldcat Search
"KRATOM" OR "Mitragyna speciosa" AND "Indonesia use"	8	1	1
"KRATOM" OR "Mitragyna speciosa" AND "Traditional Medicine"	10	126	9
"KRATOM" OR "Mitragyna speciosa" AND "Randomized Control Trial"	0	1	1
"KRATOM" OR "Mitragyna speciosa" AND "Ethnomedicine"	0	20	2
"KRATOM" OR "Mitragyna speciosa" AND "Anthropology"	1*	11	1
"KRATOM" OR "Mitragyna speciosa" AND "Health Effect"	1*	6	37

Review Kratom

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REVIEW ARTICLE

WILEY

A systematic review of (pre)clinical studies on the therapeutic potential and safety profile of kratom in humans

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Abstract

Introduction: Kratom (*Mitragyna speciosa*) is a tropical plant traditionally used as an ethnomedicinal remedy for several conditions in South East Asia. Despite the increased interest in its therapeutical benefits in Western countries, little scientific evidence is available to support such claims, and existing data remain limited to kratom's chronic consumption.

Objective: Our study aims to investigate (pre)clinical evidence on the efficacy of kratom as a therapeutic aid and its safety profile in humans.

Methods: A systematic literature search using PubMed and the Medline database was conducted between April and November 2020.

Results: Both preclinical ($N = 57$) and clinical ($N = 18$) studies emerged from our search. Preclinical data indicated a therapeutic value in terms of acute/chronic pain ($N = 23$), morphine/ethanol withdrawal, and dependence ($N = 14$), among other medical conditions ($N = 26$). Clinical data included interventional studies ($N = 2$) reporting reduced pain sensitivity, and observational studies ($N = 9$) describing the association between kratom's chronic (daily/frequent) use and safety issues, in terms of health consequences (e.g., learning impairment, high cholesterol level, dependence/withdrawal).

Conclusions: Although the initial (pre)clinical evidence on kratom's therapeutic potential and its safety profile in humans is encouraging, further validation in large, controlled clinical trials is required.

KEYWORDS

adverse effects, kratom, mitragynine, opioid withdrawal, pain, therapeutic benefits

Health Effects Associated With Kratom (*Mitragyna speciosa*) and Polysubstance Use: A Narrative Review

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ABSTRACT

BACKGROUND: Kratom (*Mitragyna speciosa*) consumption and associated health effects have raised debates in the United States. Although most people using this herb do not experience adverse health effects associated with kratom use, medical providers should be knowledgeable of emerging substances and concurrent, sequential, or simultaneous use of other drugs which may impact healthcare recommendations and prescribing practices.

METHODS: The objective of this narrative review was to elucidate selected health effects associated with using kratom—either alone or with other substances. Since scientifically controlled human subjects research on kratom use is still limited, relevant case reports were also described.

RESULTS: Cardiovascular, gastrointestinal, neurological, and psychiatric effects associated with kratom use were especially notable, and in-utero exposure accompanied concern regarding a neonate's risk for developing neonatal abstinence syndrome. Our ability to identify and understand the role of this herb in kratom-associated fatalities is complicated since kratom is not routinely screened for in standard forensic toxicology. If a screening is performed, it is usually for the major alkaloid, mitragynine, as a surrogate for kratom use. In addition to lacking a standard practice of screening decedents for kratom alkaloids, the association between mortality and kratom use may be confounded by polysubstance use, adulteration of kratom products, and drug-herb interactions.

CONCLUSIONS: Increasing medical awareness of this herb is vital to ensuring prompt administration of best-practice medical advice or treatment for people seeking information related to kratom use or for patients experiencing an adverse health effect that may be associated with using or withdrawing from kratom. Knowledge gained from continued surveillance and study of kratom and its associated health effects may assist in guiding clinical decision-making and preventing development of adverse health effects among people using kratom.

KEYWORDS: *Mitragyna*, herb-drug interactions, neonatal abstinence syndrome, mortality, mental health

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Review

Kratom use and mental health: A systematic review

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ABSTRACT

Background: Kratom (*Mitragyna speciosa*) is a psychoactive plant native to Southeastern Asia that is receiving increased international attention as a potential therapeutic agent. While much of the limited scientific research on kratom is focused on its analgesic potential, kratom use also has important risks and benefits in the domain of mental health.

Methods: We conducted a comprehensive systematic review of all studies on kratom use and mental health published between January 1960 and July 2017.

Results: Findings indicate kratom's potential as a harm reduction tool, most notably as a substitute for opioids among people who are addicted. Kratom also enhances mood and relieves anxiety among many users. For many, kratom's negative mental health effects—primarily withdrawal symptoms—appear to be mild relative to those of opioids. For some users, however, withdrawal is highly uncomfortable and maintaining abstinence becomes difficult.

Conclusion: Results inform clinicians working in the mental health and substance use fields, policy-makers, and researchers about the mental health effects of this plant.

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ORIGINAL CONTRIBUTION



Kratom and Pain Tolerance: A Randomized, Placebo-Controlled, Double-Blind Study

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Background: Kratom has a long history of traditional medicine use in Southeast Asia. Consumption of kratom products has also been reported in the US and other regions of the world. Pain relief is among many self-reported kratom effects but have not been evaluated in controlled human subject research. **Methods:** Kratom effects on pain tolerance were assessed in a randomized, placebo-controlled, double-blind study. During a 1-day inpatient stay, participants received a randomized sequence of kratom and placebo decoctions matched for taste and appearance. Pain tolerance was measured objectively in a cold pressor task (CPT) as time (seconds) between the pain onset and the hand withdrawal from the ice bath. Health status, vital signs, objective, and subjective indicators of withdrawal symptoms, self-reported data on lifetime kratom use patterns, and assessments of blinding procedures were also evaluated. **Results:** Twenty-six males with the mean (SD) age 24.3 (3.4) years were enrolled. They reported the mean (SD) 6.1 (3.2) years of daily kratom consumption. Pain tolerance increased significantly 1 hour after kratom ingestion from the mean (SD) 11.2 (6.7) seconds immediately before to 24.9 (39.4) seconds 1 hour after kratom consumption ($F(2,53,7)=4.33, p=0.02$). Pain tolerance was unchanged after consuming placebo drinks: 15.0 (19.0) seconds immediately before and 12.0 (8.1) seconds 1 hour after consumption of placebo ($F(2,52,8)=0.93, p=0.40$). No discomfort or signs of withdrawal were reported or observed during 10-20 hours of kratom discontinuation. **Conclusions:** Kratom decoction demonstrated a substantial and statistically significant increase in pain tolerance. Further rigorous research on kratom pain-relieving properties and a safety profile is needed.

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REVIEW ARTICLE



Outcomes of mothers and newborns to prenatal exposure to kratom: a systematic review

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Abstract

Kratom is a legal, widely available substance that contains opioid agonist alkaloids. Due to the marketing of kratom as an opioid alternative for treatment of pain, anxiety, depression, or to reduce opioid withdrawal symptoms, the use of kratom has increased among persons in the USA including pregnant women. This systematic review of the peer-reviewed literature regarding kratom in relation to maternal and infant outcomes resulted in analysis of six case reports of prenatal kratom exposure. Maternal and infant withdrawal from kratom exposure was described in each case, resulting in pharmacologic treatment for both mothers and infants. The original online version of this article was revised: Madison Sherbondy has been added to the author list.

Upaya Indonesia Terkait Kratom

2 Upaya yang telah dilakukan

Tahun	Kementerian/ Lembaga	Upaya
2017	Kementerian Kesehatan	Pembentukan Komite Nasional Perubahan Penggolongan Narkotika, Psikotropika, dan Prekursor dengan keanggotaan lintas sektor
2019	Balitbangkes, Kementerian Kesehatan	Melakukan kajian untuk menggolongkan Kratom dalam Narkotika Golongan I
2019	Balitbangkes, Kementerian Kesehatan	Menerbitkan buku “ Kratom, Prospek Kesehatan dan Sosial Ekonomi ”, membahas tentang deskripsi tumbuhan kratom, ekologi dan budidaya; tinjauan kandungan senyawa kimia, pemanfaatan dalam kesehatan; tinjauan aspek sosial dan ekonomi; regulasi dan pengaturan; serta prospek pemanfaatannya , dengan harapan dapat menjadi pertimbangan dalam pengaturan kratom di Indonesia.
2019	Kementerian Koordinator bidang Politik, Hukum, dan Keamanan	pembahasan yang melibatkan lintas K/L dan merekendasikan kratom untuk diatur menjadi Narkotika Golongan 1 dengan masa transisi 5 tahun.
2022 - saat ini	Kantor Staf Kepresidenan (sebagai koordinator)	Saat ini pembahasan kratom sudah ditarik ke Kantor Staf Kepresidenan dan sedang menunggu hasil penelitian (deadline September 2023) untuk ditindaklanjuti dengan pengaturan tanaman kratom di Indonesia. Pelaksanaan penelitian kratom melibatkan: <ol style="list-style-type: none"> BRIN, bekerja sama dengan Kemenkes, BPOM, BNN, K/L terkait untuk melakukan penelitian KSP, dengan bersurat ke Kepala BRIN agar penelitian dilaksanakan, bertanggung jawab melakukan Pengawasan Anggaran penelitian ITB, UNAND, UNTAN, sebagai akademisi yang Target Antara: <ol style="list-style-type: none"> Pembinaan Tata Kelola Ekspor (Kemendag, Pemda dan Bea Cukai) Pembinaan petani (Kementan-KemenkopUKM) Monitoring Kerja Bersama pengelolaan kratom (KSP)

C. Usulan Butir Wicara

Saran atau permohonan

Kemenkes kepada lawan bicara (K/L, Lintas Sektor, Ormas dsb)

- Kratom berpotensi untuk dikembangkan** menjadi produk obat dan obat tradisional antara lain sebagai analgetik kuat. Untuk itu perlu mempertimbangkan keseimbangan aspek kesehatan dan ekonomi, sehingga dapat menjamin keselamatan masyarakat namun juga mampu memberi ruang untuk pengembangan dan penemuan obat baru.
- Perlu disosialisasikan kepada masyarakat** kratom tidak direkomendasikan untuk penggunaan jangka panjang.

Catatan:

- Pengaturan penggunaan kratom di masyarakat** dapat mengacu seperti tembakau atau alkohol pembatasan dalam penggunaan dan perdagangan pembatasan usia dan/atau lokasi tertentu untuk dapat mengakses produk kratom.
- Perlu penelitian lebih lanjut untuk kratom** guna mendapatkan hasil penelitian terkait dampak positif (sebagai obat) dan dampak negatif (risikonya 13x berbahaya dari pada Ganja).

Hasil Review dan Penelitian Kratom Kemenkes RI



REVIEW

Tumbuhan Kratom (*Mitragyna speciosa* (Korth.) Havil.

Kementerian Kesehatan Republik Indonesia
September 2017

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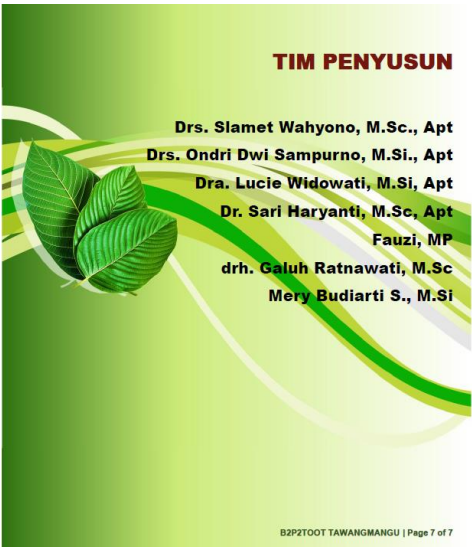
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Kratom Prospek Kesehatan dan Sosial Ekonomi

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 - Lucie Widowati
 - Lestari Handayani
 - Ondri Dwi Sampurno
 - Sari Haryanti
 - Fauzi
 - Galuh Ratnawati
 - Mery Budiarti S.



Penelitian Terkait Khasiat Obat Tanaman Kratom Indonesia

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Molecular Docking Estrogen Receptor Alpha Antagonist and P53-MDM2 Inhibitor, ADMET Prediction of Alkaloid Compound from *Mitragyna speciosa* for Breast Cancer Therapy

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Original Article

ABSTRACT

Introduction: Breast cancer is one of the major universal health problems affecting more than two million cases per year. Estrogen receptor alpha (ER α) and P53 are common targets for the treatment of breast cancer and are primarily involved in cell proliferation. The function of p53 protein is regulated by direct binding to MDM2 protein. Therefore, inhibition of p53-MDM2 interaction leads to reactivating p53 activity. Alkaloid compounds generally have potential anticancer effect. Alkaloid compound from *Mitragyna speciosa* have the potential for anticancer. **Methods:** The method used is molecular docking with AutoDockTools 1.5.6 program. Predict the properties of physicochemical, pharmacokinetic, and toxicity prediction tests (ADMET) using pkCSM. **Results:** The results showed that speciophylline, corynoxine A, and corynoxine B have the best values in free binding energy (ΔG) for estrogen receptor (ER α) alpha receptor. Meanwhile, mitraphylline, mitrafoline, and corynoxine B have the best values for protein P53. Predict ADMET using the pkCSM, the alkaloid compound has strong lipophilicity and good permeability so it predicts the ability to penetrate intestinal cell membranes and the skin membrane. Spesiophyllin, mitraphylline, and mitrafolin are not expected hepatotoxic. **Conclusion:** Speciophylline and mitraphylline have potential as anticancer drugs through the inhibitory of estrogen receptor alpha and MDM2 receptor. **Key words:** ADMET, Alkaloid, Breast Cancer, Docking, *Mitragyna speciosa*.

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Phytochemical screening and Antibacterial Activity of Kratom Leave (Juanda, et al)

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Phytochemical Screening and Antibacterial Activity of Kratom Leaf (*Mitragyna speciosa* Korth.) Against *Aeromonas hydrophilla*

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Abstract

Kratom (*Mitragyna speciosa*) is an indigenous tropical herbal plant to the Northern Malay Peninsula and Thailand. Empirically kratom leaves have several properties as herbal medicines. Currently, the treatment of diseases caused by bacteria that are resistant to antibiotics requires new compounds that have high potential. The material studied was kratom leaf extract. The solvent used for extraction is methanol. Phytochemical screening carried out includes the examination of alkaloids, flavonoids, steroids/terpenoids, phenols, tannins, and saponins. The test bacteria used was *Aeromonas hydrophilla*. The medium used is Nutrient Agar (NA). NaCl 0.9% as a bacterial suspension. Testing the antibacterial activity carried out with 10 (ten) variations of concentration namely 3%, 6%, 9%, 12%, 15%, 18%, 21%, 24%, 27% and 30%. Fresh kratom leaf is collected and then wet sorted. The extraction process was using the method of maceration. This study aims to analyze the antibacterial activity of kratom leaf, measure the secondary compounds of kratom leaf extract, and measure the best concentration to kill *Aeromonas hydrophilla*. The extraction process obtained blackish-brown extract with 62.27 grams of extract (31.14%). Secondary metabolites of kratom leaf extract show positive results of alkaloid, saponins, tannins, phenolics, steroids, and triterpenoids. Antibacterial activity against *Aeromonas hydrophilla* which is characterized by a kill zone around the paper disc with the best concentration that shows a wide killing zone was 24% of the extract.

Keywords: Antibacterial, Extract, Kratom, Mitragynine, Phytochemical Screening.

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99

ORIGINAL ARTICLE

Antibacterial mechanism of Kratom (*Mitragyna speciosa*) methanol extract on *Streptococcus pneumoniae* and *Escherichia coli* bacteria

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ATP.

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ABSTRACT

Introduction: Kratom (*Mitragyna speciosa*) is a tropical herbal plant native to the North Malay Peninsula, Malaysia and Thailand. In Indonesia, kratom is a typical plant of West Kalimantan, especially in Patusuban. Kratom leaf has many pharmacological effects, one of them is antioxidant. However, the antioxidant and antimicrobial activities of *Mitragyna speciosa* leaf extracts are lacking. This study was to examine the effect of the methanol extract of *Mitragyna speciosa* (Rubiaceae Family) leaves on microorganisms *Escherichia coli* and *Streptococcus pneumoniae*.

Methods: Kratom leaves were extracted with methanol as solvent. In this study, *S. pneumoniae* and *E. coli* bacteria have been used. Antibacterial activity tests were carried out at concentrations of 0.78%, 1.56%, 3.125%, 6.25%, 12.5%, 25%, 50% and 100%. In silico was used to search for secondary metabolites and metabolite interactions in *Mitragyna speciosa*.

Results: *Mitragyna speciosa* leaf methanol extract was effective in inhibiting the growth of *E. coli* and *S. pneumoniae* significantly (P<0.001). The growth of *E. coli* was not identified from a concentration of 25% to 100%. However, there was no bacterial growth in *S. pneumoniae* from a concentration of 6.25% to 100%. In the in silico study it was found that the secondary metabolite of *Mitragyna speciosa* is quercetin, which interacts with the ATP protein as a predictor in the mechanism of *Mitragyna speciosa* as an antibacterial.

Conclusion: In conclusion, there is no correlation between nutritional status and remission outcome of patients with ALL in the induction phase of therapy. However, high percentage of underweight patients shows nutrition needs special attention to improve therapy outcomes.

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PENGHAMBATAN PERTUMBUHAN JAMUR *Schizophyllum commune* Fries OLEH EKSTRAK ETANOL DAUN KRATOM (*Mitragyna speciosa* Korth)

(Inhibition of Fungal Growth *Schizophyllum commune* Fries by Ethanol extract of leaves of Kratom (*Mitragyna speciosa* Korth))

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Abstract

The aim of this research is to evaluate the anti-fungal activity and the effective concentration of Kratom leaf extract in inhibiting the growth of fungus *Schizophyllum commune* Fries. Kratom leaf was extract with ethanol solution. The concentration of kratom leaf extract used for treatment is 0%, 2%, 4%, 6%, 8% and 10%. Toxicity test was done by food poisoning method on PDA media with Kratom leaf extract. Result of the research showed that Kratom leaf activity extract is categorized low for 2% concentration, medium for concentration 4% and 6%, strong for concentration 8%, and very strong for concentration 10%. Concentration 10% of Kratom leaf is a very strong anti-fungal activity that inhibits 85.50% growth of *Schizophyllum commune* fungus. However, the optimum concentration of Kratom leaf extract was achieved on concentration 8% which inhibiting the growth of *Schizophyllum commune* fungi by 76.03%.

Keywords: anti-fungal, extract ethanol, Kratom leaf, Mytragyna Speciosa Korth, *Schizophyllum commune* Fries.

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PENGEMBANGAN METODE ISOLASI DAN IDENTIFIKASI MITRAGYNE IN DALAM DAUN KRATOM (*Mitragyna speciosa*)

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Abstrak

Kratom (*Mitragyna speciosa*) merupakan tanaman herbal asal Indonesia. Daun kratom memiliki banyak manfaat sebagai obat herbal seperti obat demam, diare, dan penghilang nyeri. Efek sedatif dan stimulan pada sistem syaraf pusat merupakan efek samping daun kratom. Harga yang murah dan kemudahan dalam memperoleh daun kratom menjadi penyebab utama daun kratom banyak disalahgunakan sebagai pengganti narkotika terlarang lainnya. Daun kratom masuk kedalam new psychoactive substances (NPS) atau narkotika jenis baru karena memiliki efek ketergantungan dan bertindak seperti opioid lainnya seperti heroin dan ganja.

Daun kratom dapat diperoleh dengan mudah dengan pembelian secara online. Umumnya daun kratom dijual dalam bentuk olahan yang sulit untuk dikenali bentuknya, seperti sampel dalam penelitian ini berupa bubuk dan serbuk daun kratom. Pengujian yang dilakukan untuk identifikasi daun kratom dapat dilakukan dengan cara botani dan cara kimia. Metode botani dicari karakteristik spesifik daun kratom dengan uji mikroskopik, dan secara kimia yang menjadi salah satu senyawa penentu daun kratom adalah mitragynine. Pengembangan metode identifikasi mitragynine dilakukan dengan metode GC-MS, KLT, dan KLT-densitometri. Pengembangan metode Isolasi mitagynine juga dilakukan karena sulitnya memperoleh standar baku dipasaran. Metode isolasi yang sederhana dan cepat dilakukan dengan metode KLT-Preparatif yang mana hasil isolasinya menunjukkan puncak tunggal pada hasil uji GC-MS.

Kata kunci: Identifikasi, Isolasi, Kratom, *Mitragyna speciosa*, mitagynine

Setyawati dan Lestari



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Uji Aktivitas Antioksidan Ekstrak Etanol Daun Kratom (*Mitragyna Speciosa*) Dengan Metode 1,1 Difenil-2-Pikrilhidrazil (DPPH)

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ABSTRACT

Kratom (*Mitragyna speciosa*) is one of the herbal plants from Indonesia. Kratom plants have several benefits overcoming diarrhea, increase endurance, and deal with pain. Kratom leaf has several pharmacological effects, one of which is antioxidant. This study aims to determine the antioxidant activity of kratom leaf ethanol extract using the 1,1-Diphenyl-2-Picrylhydrazil (DPPH) method expressed by IC50 values. Kratom leaves were extracted by the 3x24 hour remaceration method using 70% ethanol solvent, then concentrated with a rotary evaporator at 40 ° C, followed by an oven at a temperature (40-50) ° C to obtain a thick extract. Kratom leaf extract contains alkaloid compounds, flavonoids, tannins, and saponins. The antioxidant activity test was carried out with qualitative and quantitative tests. The qualitative antioxidant test was carried out using the Thin Layer Chromatography (TLC) method with n-hexane: ethyl acetate (7: 3) eluent, followed by DPPH spraying, which showed positive results giving antioxidant activity. The quantitative test for antioxidants was carried out using the 1,1-Diphenyl-2-Picrylhydrazil (DPPH) method using a Spectrophotometer UV-Vis with vitamin C as a comparison. The quantitative antioxidant test was carried out using the 1,1-Diphenyl-2-Picrylhydrazil (DPPH) method with vitamin C as a comparison. The results of antioxidant activity testing of kratom leaf ethanol extract showed an IC50 value of 91.96 ppm, so that it was included as a powerful antioxidant group.

Keywords: Antioxidant, DPPH, Ethanol, IC₅₀, *Mitragyna speciosa*.

Khasiat Kratom

No	Khasiat	Negara	Sumber
1	Kebugaran tubuh tanpa ada keluhan kecanduan (konsumsi seperti teh), menghilangkan nyeri, rematik, penurun panas dan susah tidur, asam urat, hipertensi, gejala stroke, diabetes, luka, diare, batuk, kolesterol, tipes, dan menambah nafsu makan.	Indonesia	Wahyono, 2012; Wahyono, 2015
2	Senyawa alkaloid dalam kratom potensial dalam pengobatan <i>breastcancer</i> .	Indonesia	Priatna, 2022;
3	Daun kratom potensial sebagai antibakteri	Indonesia	Juanda, 2019; Salim, 2021
4	Daun kratom potensial sebagai antijamur	Indonesia	Rabani, 2017
5	Daun kratom potensial sebagai antioksidan	Indonesia	Setyawati, 2020
6	Mengatasi malaria, batuk, hipertensi, diare, stress, menurunkan demam, meredakan nyeri, dan mengurangi kadar gula darah.	Malaysia, Thailand, Asia Tenggara	Griffin, 2018. Veltri dan Grundmann, 2019
7	Mengatasi nyeri, gangguan mental, dan menghentikan kecanduan opioid.	Amerika	Veltri dan Grundmann, 2019).

Efek Polifarmasi Konsumsi Kratom

Konsumsi kratom	Efek
<ul style="list-style-type: none">- Pada pasien gangguan neurologis, atau- Kratom + agen neurologis (alkohol, obat penenang, benzodiazepin, opioid, atau produk yang mengandung opium, atau zat stimulan seperti kafein, produk yang mengandung kafein, kokain, yohimbin, atau senyawa terkait).	Kejang, bahkan dapat berujung kematian.
<ul style="list-style-type: none">- Kratom + inhibitor monoamin oksidase (MAOI), seperti ayahuasca (<i>Banisteriopsis caapi</i>), rue Suriah (<i>Peganum harmala</i>), atau bunga pasiflora (<i>Passiflora incarnata</i>), yohimbe (<i>Pausinystalia yohimbe</i>).	Stimulasi berlebih dan peningkatan tekanan darah.
<ul style="list-style-type: none">- Kratom + opioid	Oversedasi atau depresi pernapasan.

Pakar Kratom

- Kajian kratom di Indonesia dan literatur review dari segala aspek → sejak 2017, era MK Prof. Nila Moeloek oleh tim Kemenkes dan tim lintas K/L.
- Kratom tidak berbahaya bila dikonsumsi seperti seduhan teh.
- Laporan negatif konsumsi kratom merupakan hasil reaksi polifarmasi terkait penyalahgunaan konsumsi kratom (oplosan/campuran) dengan obat, soda, alkohol atau zat berbahaya lain.
- Pakar dari kedokteran (Prof dr. Riyanto Setiyabudi) → terkait pemanfaatan kratom potensial sebagai analgesik, dasar masalah harus jelas apakah selama ini Indonesia kekurangan analgesik atau ada masalah dengan analgesik yang tersedia?

Pakar Kratom

- Pak MK meminta kebijakan apa yang harus dikeluarkan Kemenkes terkait kratom dari sisi kesehatan.
- Untuk menjawab pemanfaatan kratom dalam kesehatan harus jelas dulu penggolongan kratom sebagai narkotik golongan berapa.
- Apabila terbukti golongan 1, maka tidak ada kemanfaatan dari sisi kesehatan, hanya terbatas untuk riset saja. Namun bila tidak terbukti sbg narkotik gol 1 maka bisa dimanfaatkan untuk kesehatan.
- Pembahasan Kantor Staf Presiden (KSP) dan pakar, diperlukan penelitian kratom asli Indonesia untuk digunakan sebagai *evidence based* penggolongan kratom di Indonesia → dilakukan oleh BRIN.
- Penelitian BRIN belum selesai dan penjelasannya belum detail.

Pakar Kratom

- Hasil konsultasi dengan bu Ines:
 - Pakar kratom di Indonesia ada Pak Ondri dan sebagian besar peneliti BRIN (PR Bahan Baku Obat dan OT, mayoritas merupakan eks peneliti Badan Litbangkes).
 - Pencarian pakar kratom lain perlu mengidentifikasi dari konsistensi publikasi terkait kratom.
- Penelitian kratom independen di universitas terbatas pada penelitian dasar laboratorium (*molecular docking* senyawa aktif dalam kratom, uji in vitro pemanfaatan sbg kandidat obat)
 1. Prof. Dr. Sukardiman, MS.,Apt. – Universitas Airlangga
 2. Prof. Dr. Ir. Sri Andayani, MS – Universitas Brawijaya

Pakar Kratom

- Saran Kemenkes:
 - Dukungan terhadap riset yang mengarah pada penggolongan narkotika tanaman kratom.
 - Segera dikeluarkan kebijakan penggolongan kratom setelah diperoleh *evidence based* yang kuat.

TERIMA KASIH

