



Mitragynine

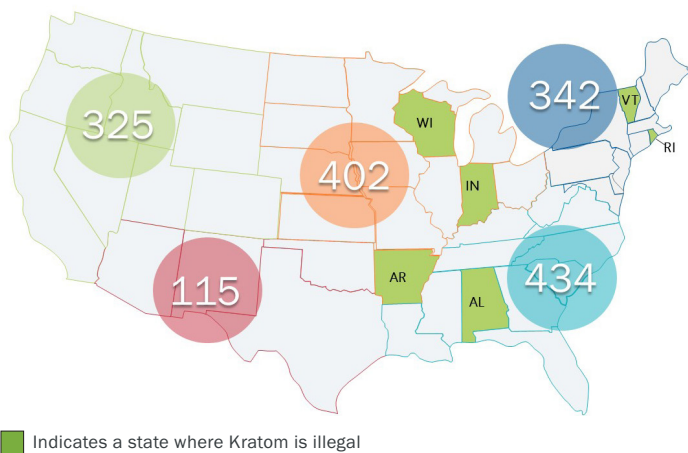
Street names: Biak-biak, Ketum, Kakuam, Ithang, Thom

Mitragynine is an alkaloid found in the plant kratom which originates from a tropical tree (*Mitragyna speciosa*) native to Southeast Asia. Two compounds in kratom leaves, *mitragynine* and *7- α -hydroxymitragynine*, interact with opioid receptors in the brain that may have psychotropic effects, similar to both opioids and stimulants, depending on dosage. Used to treat pain or manage opioid withdrawal symptoms, kratom is easier to obtain than drugs prescribed for these purposes. Rather than treating addiction and withdrawal however, the use of kratom may actually lead to them.

Kratom is not scheduled by the US Drug Enforcement Agency, yet is it illegal in 6 states (Alabama, Arkansas, Indiana, Rhode Island, Vermont, and Wisconsin), Sarasota County Florida, Union County Mississippi, and the city of San Diego.¹ Deaths have been linked to kratom, typically in combination with opioids or prescription or over-the-counter drugs.²

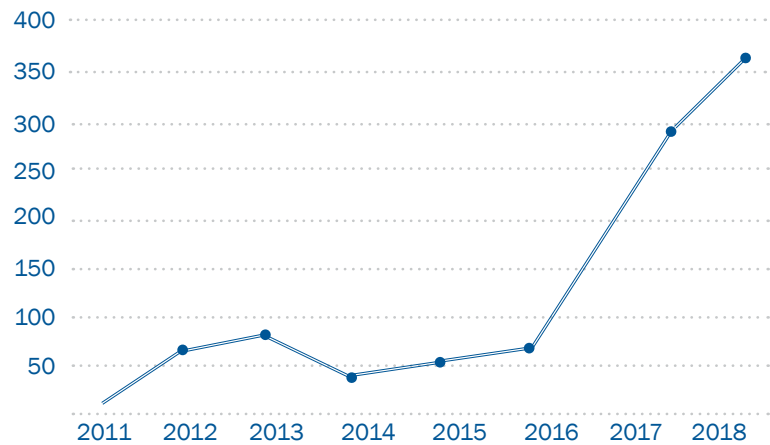
Confirmed Mitragynine in Postmortem Toxicology and Driving Under Influence of Drugs Investigations³

Testing Performed by NMS Labs, January 1, 2019 - April 30, 2020



Kratom Exposures Reported to Poison Control Centers in the United States⁴

January 1, 2011 - July 31, 2018



Kratom in the United States: 2010-2020

2010–2015: US poison centers received 660 calls for Kratom Exposure. Call count increased tenfold during this time.⁵

2016: The Drug Enforcement Agency attempts to schedule Kratom on the Controlled Substances List. The decision was reversed.⁶⁻⁷

2018: The Food and Drug Administration issues an announcement calling Kratom's compounds opioids and linking it to 44 deaths.⁸

2019: NMS Labs found a 53% increase of mitragynine positivity in Postmortem and DUID investigations in 2018 vs. 2017.⁹

1. US National Institute of Health (2018). Kratom

2. Kratom Masters (2020). Is Kratom Legal?

3. NMS Labs, Mitragynine Positivity Reports, January 2019 - April 2020

4. Eggleston, W., Stoppacher, R., Suen, K., Marraffa, J. M., & Nelson, L. S. (2019). Kratom Use and Toxicities in the United States. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*.

5. Anwar, M., et al. (2016). Notes from the Field: Kratom (*Mitragyna speciosa*) Exposures Reported to Poison Centers – United States, 2010–2015

6. US Drug Enforcement Agency (2016). DEA Announces Intent To Schedule Kratom.

7. Ingraham, C. (2016). The DEA is withdrawing a proposal to ban another plant after the Internet got really mad. *The Washington Post*.

8. US Food and Drug Administration (2018). Statement from FDA Commissioner Scott Gottlieb, M.D., on the agency's scientific evidence on the presence of opioid compounds in kratom, underscoring its potential for abuse.

9. Papsun, D., et al. (2019). The Trouble With Kratom: Analytical and Interpretative Issues Involving Mitragynine. *Journal of Analytical Toxicology*.

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