



## BOTANICAL EDUCATION ALLIANCE™

### **A detailed overview of Facts, Scientific Study, and Professional Testimony on Kratom (*Mitragyna Speciosa*)**

-As early as 1897, kratom was recognized as an analgesic, antitussive, antidiarrheal and as a remedy for opium withdrawal.

-Thai villagers use extracts of kratom leaves to treat cough, diarrhea, and musculoskeletal pain.

-Herbal products for opioid addiction and withdrawal, such as kratom and specific Chinese herbal medications such as Weini Com, can compliment existing treatments.

Jeanine Ward, Christopher Rosenbaum, Christina Hernon, Christopher McCurdy, and Edward W. Boyer. 1. Division of Medical Toxicology, Dept. of Emergency Medicine, University of Massachusetts Medical School, Worcester, MA, USA 2. Department of Medicinal Chemistry, Laboratory for Applied Drug Design and Synthesis, School of Pharmacy University of Mississippi, University, MS, USA. Et al., 2011

-Leaves from *Mitragyna speciosa* have been traditionally used for medicinal and stimulant properties to treat chronic pain.

(Boyer, Babu, Adkins, McCurdy, & Halpern, 2008; Boyer, Babu, & Macalino, 2007; Rosenbaum, Carreiro, & Babu, 2012) and opioid withdrawal (Boyer et al., 2008; Boyer et al., 2007; McWhirter & Morris, 2010; Rosenbaum et al., 2012; Vicknasingam et al., 2010)

Phillip Schoenwetter M.D. states, "Kratom now is a 'must have' adjunct to numerous long term conditions and its role in my practice already exceeds 'usual and customary' uses."

Dr. Gerald Wall, a retired New Jersey pharmacist found that with kratom, he could move with no pain, had increased energy and stamina, and could exercise vigorously. "With kratom there are no negative side effects or responses."

Michael McGuffin, President of the American Herbal Products Association stated, "The FDA [last year targeted] Kratom and frankly I don't think it's going to stick. There is a lot of information that is known about Kratom's use historically and traditionally in a dosage level that has a benefit and it is not about getting high or not about addictive potential."

Ryan Estévez, MD, PhD, MPH, Medical degree St. George, Masters degree, social



psychology Stanford University, Masters degree, public health Harvard University, Master of public health, health policy and management Harvard University commented,

"I am well versed in both 'good' drugs that help people on a daily basis, and 'bad' drugs that are epidemically abused and create a tremendous burden on society. Kratom is [a natural herbal supplement] and not one of these "bad" drugs (I have yet to admit anyone for kratom-addiction) and efforts to ban it are misguided and wasteful. Grieving parents, well intentioned policy makers, and opportunist politicians often seize on opportunities to assign blame and then offer a 'quick fix.' The proposal of an absolute ban of Kratom perfectly illustrates what can happen when hype trumps science, as this plant has been benefiting millions of people for decades of time. I have been troubled by an increase in news reports and misinformation that has been disseminated about the 'dangerous' and 'addictive drug' Kratom. Even worse is the subsequent careless and knee-jerk response by many legislators and policy makers to ban Kratom. I believe much of the negative publicity surrounding Kratom to be the result of being incorrectly lumped in with synthetically derived mind-altering substances such as 'spice' and bath-salts, substances that deserve their reputations for being dangerous and harmful."

Jeffrey Miron Director of economic studies at the Cato Institute, Director of undergraduate studies in the Dept of Economics at Harvard University. His area of expertise is the economics of libertarianism, with particular emphasis on the economics of illegal drugs.

"Take the caffeine example. Hundreds of millions of people around the globe - perhaps billions - are addicted to tea, coffee, or diet coke, yet few consider this an issue for health or policy. Why? Because long-term, heavy use of caffeine does not seem to have major undesired side effects. Indeed, much of the world celebrates its coffee and tea habit, praising the culinary enjoyment and social interaction that accompanies or even arises from this addiction.

So for those who believe government should ban "harmful products," the question should not be whether a substance is addictive but whether long-term, heavy use harms health, productivity, or other aspects of life."

(With regards to the NY Times article) "Nowhere does the article cite evidence that Kratom addiction has large or common side effects; rather, the article takes as given that

addiction is undesirable per se. That makes no sense, as the caffeine example shows.”

Jack E. Henningfield, Ph.D. Vice President for Research, Health Policy and Abuse Liability, Pinney Associates Adjunct Professor of Behavioral Biology, The Johns Hopkins University School of Medicine:

“Many kratom-based preparations are available in the United States and used with little evidence of dependence or serious adverse events and no documented kratom-caused overdose deaths.”

“Consumption does not typically interfere with work or social activities and commitments, and in fact are widely reported in the U.S., as in Southeast Asia, to contribute to work productivity, quality of life, and social relationships.”

“A preliminary assessment of major national substance abuse related surveillance systems reveal little evidence of abuse in youth (e.g., University of Michigan, National Institute on Drug Abuser Monitoring the Future Survey), adults (e.g., the Substance Abuse and Mental Health Services Administration’s National Survey on Drug Use and Health), in persons with substance use disorders and dependence who are seeking treatment (e.g., Treatment Episodes Data Set).”

“the low apparent real world abuse and dependence potential and its excellent safety record are consistent with findings from scientific studies of its abuse potential and descriptions of its use and effects on internet websites and discussion groups by users.”

Florida Dept. of Law Enforcement, Office of Statewide Intelligence “Kratom – *Mitragyna speciosa* The Impact to Florida”

“A review of information currently available through identified law enforcement and laboratory sources in Florida indicates that Kratom does not constitute a significant risk to the safety and welfare of Florida residents.”

“According to the Florida Department of Health (DOH), no pervasive health issues have been attributed to the ingestion of Kratom products in Florida.”

-Kratom exhibits no acute toxicity

S.N. Harizala, b, c, , S.M. Mansorb, , J. Hasnanc, J.K.J. Tharakana and J. Abdullaha Department of Neurosciences, School of Medical Sciences, Universiti Sains Malaysia, Centre for Drug Research, Universiti Sains Malaysia Department of Pathology, School of Medical Sciences, Universiti Sains Malaysia 2010

-Displays powerful antioxidant and antibacterial properties

Evaluation of Antioxidant and Antibacterial Activities of Aqueous, Methanolic and Alkaloid Extracts from *Mitragyna Speciosa*

(Rubiaceae Family) Leaves. Suhanya Parthasarathy, Juzaili Bin Azizi, Surash Ramanathan, Sabariah Ismail, Sreenivasan Sasidharan, Mohd Ikram Mohd. Said and Sharif Mahsufi Mansor. Universiti Sains Malaysia, Penang, Malaysia Institute for Research in Molecular Medicine, Malaysia Universiti Kebangsaan Malaysia Selangor, Malaysia 2009

-Assists with drug and alcohol withdrawal symptoms

Fitoterapia Volume 78, Issue 3, April 2007, Pages 182-185

-Contains several oxindole alkaloids, which have exhibited potent immunomodulation properties, and even contains constituents that have exhibited anti-cancer properties.

García Prado, E., et al. "Antiproliferative effects of mitraphylline, a pentacyclic oxindole alkaloid of *Uncaria tomentosa* on human glioma and neuroblastoma cell lines." *Phytomedicine*. 2007; 14(4): 280-4.

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-Increases energy (Chittrakarn et al., 2010; Vicknasingam et al., 2010)

-Reports of severe toxicities following the use of *Mitragyna speciosa* are purportedly rare (Kapp et al., 2011)

-New York State Office of Alcoholism and Substance Abuse Services- Side effects, although rare, may include dry mouth, increased or decreased urination, loss of appetite, and nausea or vomiting. Heavy use can result in a prolonged sleep.

List of kratom alkaloids and their individual qualities:

*Tetrahydroalstonine*: Hypoglycemic, anti-adrenergic.

*Speciophylline*: Indole alkaloid. Anti-leukemic.

*Speciogynine*: Smooth muscle relaxer.

*Rhynchophylline*: Vasodilator, antihypertensive, calcium channel blocker, antiaggregant, anti-inflammatory, antipyretic, anti-arrhythmic, antihelminthic.

*Paynantheine*: Indole alkaloid. Smooth muscle relaxer.

*Mitraphylline*: Oxindole alkaloid. Vasodilator, antihypertensive, muscle relaxer, diuretic, anti-amnesic, anti-leukemic, possible immunostimulant.

*Mitragynine*: Indole alkaloid. Analgesic, antitussive, antidiarrheal, adrenergic, antimalarial.

*Isorhynchophylline*: Immunostimulant

*Isomitraphylline*: Immunostimulant, anti-leukemic.

*Epicatechin*: Antioxidant, antiaggregant, antibacterial, antidiabetic, antihepatic, anti-inflammatory, anti-leukemic, antimutagenic, antiperoxidant, antiviral, potential cancer preventative, alpha-amylase inhibitor. Also found in dark chocolate.

*Corynantheidine*:  $\mu$ -opioid antagonist, also found in Yohimbe.

Ciliaphylline: antitussive, analgesic.