

## **KRATOM (*Mitragyna speciosa korth*)** **(Street Names: Thang, Kakuam, Thom, Ketum, Biak)**

### **Introduction:**

Kratom, (*Mitragyna speciosa korth*), is a tropical tree indigenous to Thailand, Malaysia, Myanmar and other areas of Southeast Asia. Kratom is in the same family as the coffee tree (*Rubiaceae*). The tree reaches heights of 50 feet with a spread of over 15 feet.

Kratom has been used by natives of Thailand and other regions of Southeast Asia as an herbal drug for decades. Traditionally, kratom was mostly used as a stimulant by Thai and Malaysian laborers and farmers to overcome the burdens of hard work. They chewed the leaves to make them work harder and provide energy and relief from muscle strains. Kratom was also used in Southeast Asia and by Thai natives to substitute for opium when opium is not available. It has also been used to manage opioid withdrawal symptoms by chronic opioid users.

In 1943, the Thai government passed the Kratom Act 2486 that made planting of the tree illegal. In 1979, the Thai government enacted the Narcotics Act B.E. 2522, placing kratom along with marijuana in Category V of a five category classification of narcotics. It has been reported that young Thai militants drink a "4x100" kratom formula to make them "more bold and fearless and easy to control." The two "4x100" kratom formulas are described as a mixture of boiled kratom leaves, mosquito coils, and cola or a mixture of boiled cough syrup, kratom leaves, and cola served with ice. In this report, it also mentioned that the use of the "4x100" formula was gaining popularity among Muslim youngsters in several districts of Yala (Southern Thailand) and was available in local coffee and tea shops.

Kratom is promoted as a legal psychoactive product on numerous websites in the U.S. On those websites, topics range from vendors listings, preparation of tea and recommended doses, to alleged medicinal uses, and user reports of drug experiences.

### **Licit Uses:**

There is no legitimate medical use for kratom in the U.S.

### **Chemistry:**

Over 25 alkaloids have been isolated from kratom; mitragynine and 7-hydroxymitragynine are the primary psychoactive alkaloids in the plant.

### **Pharmacology:**

Pharmacology studies show that mitragynine and 7-hydroxymitragynine have mu-opioid receptor agonist activity. Kratom has been described as producing both stimulant and sedative effects. At low doses, it produces stimulant effects, with users reporting increased alertness, physical energy, talkativeness and sociable behavior. At high doses, opioid effects are produced, in addition to sedative and euphoric effects. Effects occur within 5 to 10 minutes after ingestion and last for 2 to 5 hours. Acute side effects include nausea, itching, sweating, dry mouth, constipation, increased urination, and loss of appetite.

Kratom consumption can lead to addiction. In a study of Thai kratom addicts, it was observed that some addicts chewed kratom daily for 3 to 30 years (mean of 18.6 years). Long-term use of kratom produced anorexia, weight loss, insomnia, skin darkening, dry mouth, frequent urination, and constipation. A withdrawal syndrome was observed, consisting of symptoms of hostility, aggression, emotional lability, wet nose, achy muscles and bones, and jerky movement of the limbs. Furthermore, several cases of kratom psychosis were observed, where kratom addicts exhibited psychotic symptoms that included hallucinations, delusion and confusion. In the U.S., the use of kratom has been associated with numerous cases of overdose and fatalities.

### **Illicit Uses:**

In recent years, there has been an increase in the popularity of kratom and kratom-based products on the recreation drug market. Kratom is mainly being abused orally as a tea. Chewing kratom leaves is another method of consumption. Doses of 2 to 10 grams are recommended to achieve the desired effects. The 2021 American Association of Poison Control Centers (AAPCC) report indicates that kratom accounted for 1,524 case mentions, 948 single exposures, 213 minor outcomes, 305 moderate outcomes, 67 major outcomes and 4 deaths.

Other countries are reporting emerging new trends in the use of kratom. In the United Kingdom, kratom is promoted as an "herbal speedball." In Malaysia, kratom (known as ketum) juice preparations are illegally available.

### **User Population:**

Kratom is commonly used as an alternative to prescription opioid, self-treatment of opioid use disorder or other substance use disorder, including withdrawal.

### **Illicit Distribution:**

The DEA's National Forensic Laboratory Information System (NFLIS) Drug database, which collects drug analysis information from participating federal, state and local forensic laboratories, indicates that there were 506 drug reports of mitragynine, the primary active alkaloid in kratom, in 2019. Since that time, the number of reports of mitragynine to NFLIS-Drug have steadily decreased, totaling 366 in 2020, 327 in 2021, and 185 in 2022.

Kratom is widely available on the Internet and also sold in ethnobotanical retail stores. There are numerous vendors within and outside of the U.S. selling kratom. Forms of kratom available through the Internet include leaves (whole or crushed), powder, extract, encapsulated powder, and extract resin "pies" (40g pellets made from reduced extract). Seeds and whole trees are also available from some vendors through the Internet, suggesting the possibility of domestic cultivation.

### **Control Status:**

Kratom is not scheduled under the Controlled Substances Act.