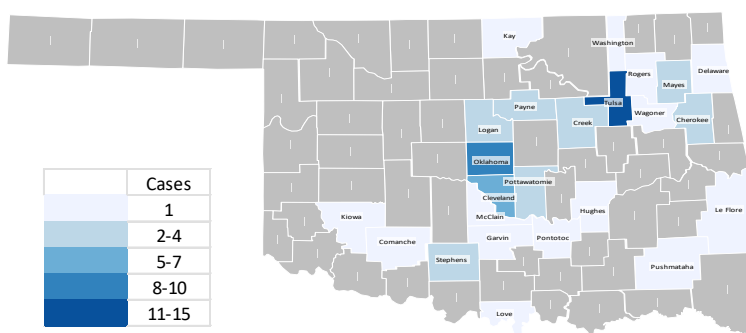
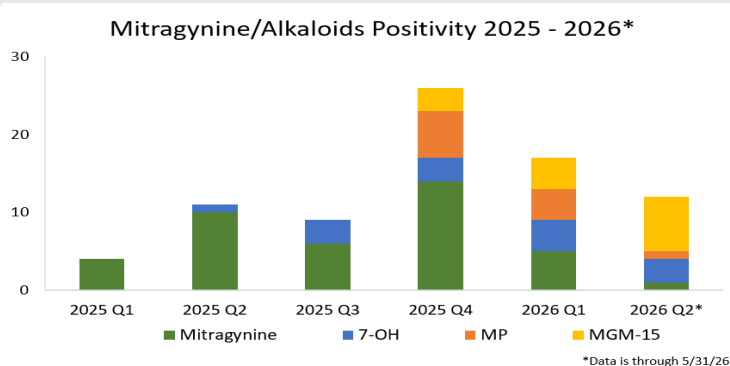


KRATOM AND MITRAGYNE ALKALOIDS DETECTIONS INCREASE AMONG FATAL OVERDOSES IN OKLAHOMA

PURPOSE: The objective of this alert is to notify public health and safety agencies, law enforcement agencies, legislators, clinicians, and other related entities about the rising presence of mitragynine alkaloids in deceased individuals in Oklahoma.

BACKGROUND: Kratom is a tree (*Mitragyna speciosa*, Rubiaceae) that is native to southeast Asia and the leaves were historically consumed for pain relief, mood enhancement, and to relieve symptoms of opioid withdrawal. The leaves contain **mitragynine**, the most abundant alkaloid, 7-hydroxymitragynine (7-OH) and more than 40 other alkaloids. Reported **adverse effects** of kratom consumption include agitation, drowsiness, tachycardia, vomiting, and confusion with more severe side effects including seizures, hallucinations, respiratory depression, coma, and cardiac arrest. In the United States, a recent trend with kratom is the abundance of concentrated alkaloid products in powders, capsules, and liquid extracts sold online and over the counter. Since mid-2024, laboratories identifying components of commercial kratom products detected 7-OH, mitragynine pseudoindoxyl (MP) and/or dihydro-7-hydroxy mitragynine (MGM-15). Health officials expressed substantial concern for these products due to their activity as opioid agonists and their potential potency. **7-OH is 13x more potent than morphine, MP is 20x more potent than morphine, and MGM-15 is more potent than 7-OH, while mitragynine has lower potency than morphine.** Reports from the National Poison Data System regarding kratom exposures indicate a 1,200% increase in exposures from 2015 to 2025 with the exposures accounting for more hospitalizations and serious outcomes, including death. The reports typically involved young adult males aged 20-39 years; however, over the 11-year period, there was a sharp increase with reports among adults aged 40-59 years.

SUMMARY: In Oklahoma, the Office of the Chief Medical Examiner (OCME) Toxicology Lab has seen an increase in detection of mitragynine alkaloids in fatal overdoses. In 2025, the lab detected mitragynine in 35 cases and mitragynine was related to the cause of death for 9 cases. Mitragynine combined with at least one alkaloid was detected in 9 cases and both drugs detected were related to the cause of death for 3 cases. A mitragynine alkaloid was detected in 2 cases and listed in the cause of death for both cases. A total of **14 cases** from 2025 listed mitragynine or an alkaloid in the **cause of death**, making it one of the top twelve reported substances in drug-related overdoses in the state of Oklahoma. The average age for these mitragynine/alkaloid-related deaths was 40 years old (range: 22-70 years) and 63% (n=11) were male. Typical autopsy findings for mitragynine-related deaths may include pulmonary edema, aspiration, visceral congestion of liver, kidneys, or brain, and urinary retention, findings that are often associated with other opioid-related deaths. Since the beginning of 2026, the Toxicology Lab has seen a strong shift in detection to more mitragynine alkaloids than mitragynine, with the majority of the cases **positive for MGM-15**. The figure below shows the positivity rate of 58 death cases received by the Toxicology Lab between January 2025 and May 2026 in which one or more mitragynine-related substances was detected in a biological sample. These cases occurred within 24 Oklahoma counties with **Tulsa County** having the highest rate at 14 cases followed by **Oklahoma County** with 9 cases.



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Acknowledgements: This report was prepared by Jesse Kemp (Chief Forensic Toxicologist) and Kacey Cliburn (Deputy Chief Forensic Toxicologist) of the OCME Toxicology Lab. The authors acknowledge the OCME Toxicology Lab staff for contributions of the data. For more information about the OCME, please visit <https://oklahoma.gov/ocme.html>. For more information about drug trends in Oklahoma, email Toxicology@ocme.ok.gov.