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Evaluation of K9 narcotic training aid age: An insight into the "instrumental sniff" of common drugs

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There has been little research into the use of narcotic training aids in relation to K9 performance, even though they are a pivotal part of the training regimen. Canines are the front line of defense in detecting narcotics by police and military working units all across the nation. Many different associations that certify canines as narcotic detector dogs have very little standards as to the optimal lifespan of their training aids. Emerging research is starting to look into canine detection, but none are looking at the age or lifespan of narcotic canine training aids and their subsequent impact on canine performance. The purpose of this study is to monitor and provide a calibration standard of the target odor vapors emanating from the K9 training aids. The evaluation process consists of collaboration with the local police department, canine unit and their narcotic training aids that range in age of up to 10 years compared to fresh training aids. Instrumental evaluation utilizes divinylbenzene/carbon/polydimethylsiloxane (DVB/CAR/PDMS) coated solid phase-microextraction (SPME) fibers to extract the narcotic headspace odor profile of heroin, methamphetamine and cocaine. Training aids are sampled in individual mason jars for time increments of 15 min, 30 min, and 1 hr to allow for headspace extraction time optimization. Evaluation of the abundance of target volatiles was performed at each extraction time to measure training aid condition. The findings include an assortment of chemical compounds emitted from each narcotic exhibiting different odor profiles as a factor of age. The benefit this has is enhanced knowledge in the realm of optimal canine detection procedures for national security purposes and K9 detection performance. This research will ultimately bridge a gap in knowledge about the odor concentration levels for canine narcotic training aids at various ages which have never been done before.

Biography

Lauren Alejandro is a current Graduate Student working on her Master's degree in Forensic Science at Texas Tech University (TTU). She received her BS from Texas A & M, Corpus Christi (TAMUCC) where she minored in Chemistry and was involved in two professional internships. One of the internships was with the Corpus Christi Police Department, Crime Scene Unit and the other with Nueces County Medical Examiner's Office to further advance her knowledge within the Forensic field. She is the Co-author of research presented during the 12th annual PATHWAYS student research symposium of 2015. She is a Student Member of the American Academy of Forensic Science (AAFS) and currently serves as Vice President for the Forensic Science Society at TTU.

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