



Personnel Safety Critical to Proper Storage of Marijuana for Evidence Protection and Legal Use

Air Science Drugkeeper™ and Portable Drying Rooms Minimize Toxicity, Protect Workers from Long-Term Exposure

Chambre, Andre: CEO, Air Science LLC
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As laws associated with the legalization of marijuana continue to evolve throughout the United States, the criminal justice system and the forensic scientists who support evidence management are faced with new challenges in processing, storing and disposing of illegal plants¹. Additionally, as public pressure for the use of medical marijuana becomes more widespread, and because medical marijuana growers typically operate on an *ad hoc* basis beyond the tightly controlled criteria of the United States Food and Drug Administration, risks of contamination from naturally occurring aflatoxins pose serious consequences to an unsuspecting public.

The presence of marijuana in American society has migrated well beyond the scenario portrayed in the 1960s through a training film that became a cult hit, *Reefer Madness*². The consequences associated with the legalization of marijuana for recreational use, and an emerging social and legal tolerance for "medical" marijuana prescribed for patients who can document a history of chronic pain, create issues along the supply chain that remain to be defined and codified as best practices.

Specifically, storage of marijuana and other narcotics can present significant hazards to law enforcement property managers if plants are not properly processed and stowed.

¹ *Evidence Log*, International Association for Property and Evidence, Inc.

² *Reefer Madness*, IMDB, <http://www.imdb.com/title/tt0028346/>



In a series of articles published in *The Evidence Log*, a newsletter of the International Association for Property and Evidence, Inc., (IAPE)³ the management of marijuana evidence in support of legal action continues to prompt a dialogue among the law enforcement community on best practices for preparation, storage and disposal.

Regardless of whether the marijuana is legal or illegal, any or a combination of mold, spores, yeasts and fungi can quickly turn the plant into a toxic poison proven to compromise vital systems in humans and animals leading to illness and death⁴.

Air Science USA, LLC continues to develop solutions for forensic storage and processing as the requirement for product (evidence) protection, together with personnel and environmental protection, remains in the chain of custody. This need for protection parallels the hospital and clinical market; a study documenting the effects of long-term exposure to trace amounts of cytotoxic chemicals used in chemotherapy was published by the American Nurses Association in 2004⁵. In this study, nurses with careers in cancer treatment and preparation of IV admixtures were shown to have accumulated high levels of chemotherapy agents over time. The publication of this report triggered a widespread demand in hospitals for biological safety cabinets, fume hoods and barrier isolators which offer occupational protection from minute amounts of particulates and aerosols.

Just as the clinical market responded to the need to protect workers from the hazards associated with long-term exposure to cytotoxic agents, it can be argued that the forensic sciences and law enforcement community should consider taking similar precautions in handling marijuana and other narcotics. Depending on the nature of the evidence, the criteria for defining hazardous drugs and how to handle them is universal. (Table 1)

Table 1: Criteria for Defining Hazardous Drugs

Carcinogenicity
Teratogenicity or developmental toxicity
Reproductive toxicity
Organ toxicity at low doses
Genotoxicity
Structure or toxicity similar to drugs classified as hazardous using the above criteria

In a process manual published by IAPE, it is recommended that live plant material and other damp or wet evidence be dried prior to submission⁶.

"This includes marijuana, mushrooms, peyote, or opium poppies. Fresh plant material, when packaged in airtight containers such as plastic bags, decays rapidly, produces mold and can inhibit or possibly eliminate the chance for detecting a controlled substance, as well as impose health hazards. Marijuana, mushrooms, peyote or opium poppies must be completely dry prior to packaging."

In a blog post published by Electrocorp⁷ the company suggests that evidence rooms can become contaminated over time by *Aspergillus*, a mold which grows naturally on marijuana, dead leaves, compost piles and grain.

"When property evidence officers handle the decaying material, they can be exposed to mold spores that enter the human body through the ears and nose. Reported health effects are stuffiness, a feeling of being unwell, coughing, wheezing and lung damage. Another issue with plastic is the destruction of evidence. When officers use plastic to hold evidence, the retained moisture can cause it to mold, corrode or rust, and plastic is often blamed for destroying latent fingerprints. Some law enforcement officers ask that plastic is only used for drug-related items, except marijuana, and jewelry."

Additional context and references are available⁸.

3 Evidence Log, IAPE, Inc.; Vol. 2014, No.3

4 Verweij, Paul. E., MD, et.al.; Department of Medical Microbiology, University Medical Center, Nijmegen, The Netherlands, JAMA, December 13, 2000, Vol. 284, No. 22

5 ANA Periodicals, Volume 9, 2004, No 3: Sept'04; Safe Handling of Hazardous Drugs.

6 International Association for Property and Evidence, Inc. Website <http://www.iape.org/emanual/marijuana.htm>

7 Electrocorp blog: <https://electrocorpairpurification.wordpress.com/2011/04/05/mold-wreaks-havoc-on-material-stored-in-evidence-rooms/>

8 Masters, Nancy; <http://www.iape.org/pdfFiles/Aspergillus-Part1-%202.pdf>



As academic programs centered on forensic sciences broaden their research we can expect more information and best practices associated with marijuana storage to enrich the dialogue.

Concurrent with this effort, Air Science USA, LLC has included in its product line a drug storage cabinet especially designed to isolate potentially toxic evidence such as marijuana. Marketed as the Drugkeeper™ and available in several sizes, this cabinet is useful for short-term storage of hazardous chemicals and other substances typically associated with drug investigations. Storage in the Drugkeeper minimizes health and environmental risks associated with handling chemical vapors and residues, VOCs and other materials associated with methamphetamine production, marijuana and other narcotics⁹.

A companion product of Air Science marketed as the Safekeeper™ forensic evidence drying cabinet is designed to store, dry or otherwise process forensic evidence in the controlled environment of a tamper-resistant compartment to maintain the chain of custody. Both the Drugkeeper and Safekeeper are available with optional heat and dehumidification systems to accelerate the drying process.

⁹ Air Science USA, LLC website library:
<http://www.airscience.com/library>



120 6th Street • Fort Myers, FL 33907
T/239.489.0024 • Toll Free/800.306.0656 • F/800.306.0677
www.airscience.com

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About the Author: Andre Chambre

Andy Chambre is the founder and CEO of Air Science, LLC and has been associated with the ductless fume hood industry for more than 25 years. He was formerly the US Vice President for Captair Labx and President of Astec Microflow US. He was named President of Filtco Corporation in 2003 and currently also serves as a Director of Air Science Technologies Ltd. in the UK. Mr. Chambre has written numerous articles on fume hood safety and assisted in the development of safety standards by serving on various committees such as the Canadian Standards Association subcommittee on fume hoods and the SEFA 9 Ductless Enclosures Committee.

Sources

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Abstract: Recommendations for the safe handling of hazardous drugs have been available for more than twenty years. Evidence for continued risk of occupational exposure is abundant; however, nurses' use of the recommended precautions is not universal. This may be related to a lack of information or to a lack of serious concern for the potential hazards. This article includes a discussion of current issues related to handling hazardous drugs in the workplace and a review of the history of safe handling guidelines, current recommendations, and barriers to implementing guidelines in health care settings.ngs. (NIOSH, 2004)

- Air Science USA, LLC website library:
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