



## **SYMPOSIUM ON CONTAMINANTS IN THE CANNABIS AND HEMP INDUSTRY AND THEIR IMPACT ON CONSUMER SAFETY**

Sponsored by ASTM Committee D37 on Cannabis

October 10 - October 12, 2023  
VIRTUAL ONLY

**Symposium Co-chairs:**      **Robert Thomas**  
Scientific Solutions  
Gaithersburg, Maryland, USA

**Cary Black**  
CK Black Group, Inc.  
Chalmette, Louisiana, USA

### **About the Symposium**

This symposium will provide a forum for evaluating the current evidence and gaps regarding the presence and measurements of contaminants that pose a risk to consumer health and safety in cannabis and hemp products with a focus on evaluating the sources of contamination (including cultivation, plant uptake, extraction, processing, manufacturing, packaging, and delivery, etc.) and how they can be mitigated.

The information presented will provide a foundation for the development of new standards and specifications related to conducting risk assessments based on common sources of contamination in the Cannabis/Hemp industries, which will enable sound approaches to identify and mitigate contaminants.

Topics for this symposium include, but are not limited to regulatory limits, standards development, toxicity impact, test methods, vaping concerns and other relevant issues for the following contaminants:

- Elemental Impurities (Heavy Metals)
- Pesticides
- Microbials
- Other Contaminants/Toxins of Interest

**TUESDAY, OCTOBER 10, 2023**

*(Note: All times are EDT)*

10:30 AM **Opening Remarks**  
Kathleen May, Triskele Quality Solutions, Kenosha, Wisconsin, USA  
*D37 Committee Chair*

**SESSION 1: HEAVY METALS AND BEYOND**

**Session Chair:** Robert Thomas, Scientific Solutions, Gaithersburg, Maryland, USA

10:40 AM **KEYNOTE #1: The Importance of Testing Cannabis: A Real-World Perspective**  
Ralph Paroli, NRC Canada, Ottawa, Ontario, Canada  
Cary Black, CK Black Group, Chalmette, Louisiana, USA

11:20 AM **Preliminary Levels and Distribution of Health-Relevant Heavy Metals in Commercially Grown Cannabis and Hemp**  
Stephen Goldman, Kaycha Labs, Denver, Colorado, USA

12:00 PM **ASTM Metals in Cannabis Method D8469**  
Craig Jones, Agilent Technologies, Santa Clara, California, USA

12:40 PM BREAK

1:00 PM **The Elemental Composition of Hemp Flower: Sources of Elemental Impurities and Implications for Consumer Product Safety**  
Derek Wright, Lake Superior State University, Sault Sainte Marie, Michigan, USA

1:40 PM **Comparison of State-Level Regulations for Cannabis Contaminants and Implications for Public Health**  
Maxwell Leung, Arizona State University, Glendale, Arizona, USA

2:20 PM **Rapid, Efficient, and Safe Sample Preparation of Mixed Cannabis Matrices for Analysis of Multiple Trace Elements**  
Alicia Stell, CEM Corp., Matthews, North Carolina, USA

3:00 PM BREAK

3:20 PM **Understanding Sources of Elemental Contaminants in Cannabis and Hemp: Benefits of a Risk Assessment Strategy**  
Robert Thomas, Scientific Solutions, Gaithersburg, Maryland, USA

4:00 PM **Quality Standards in State Programs Permitting Cannabis for Medical Uses**  
Cassandra L. Taylor, U.S. Food & Drug Administration, Silver Spring, Maryland, USA

4:40 PM **Cannabis: Was It Tested? Why You Need to Know**  
Uma Dhanabalan, Global Health & Hygiene Solutions LLC, Cambridge, Massachusetts, USA

5:20 PM SYMPOSIUM DAY 1 ENDS

**WEDNESDAY, OCTOBER 11, 2023**

*(Note: All times are EDT)*

10:30 AM **Opening Remarks**  
Jahan Marcu, Marcu & Arora, San Francisco, California, USA

**SESSION 2: VAPES AND MORE**

**Session Chair:** Cary Black, CK Black Group, Chalmette, Louisiana, USA

10:40 AM **KEYNOTE #2: Behind the Smokescreen**  
Robert O'Brien, Supra Research, Kelowna, British Columbia, Canada

11:20 AM **Progress in Development of Traps Suitable for Collection of Electronic Cigarette Aerosols for Analysis of Metals**  
R. Steven Pappas, CDC, Tobacco and Cannabis Inorganic Group, Atlanta, Georgia, USA

12:00 PM **Evidence of Metal Particles in Cannabis Vape Liquids**  
Zuzana Gajdosechova, NRC Canada, Ottawa, Ontario, Canada

12:40 PM BREAK

1:00 PM **Latex is a Terpene: Why Aren't We Looking for Macromolecules in Cannabis Vape Oils and Vape Condensates?**  
Daniel Batzel, MFREE Polyene Services of California, Inc., Walnut Creek, California, USA

1:40 PM **Understanding Thermal Degradation Products as Contaminants Generated by the Chosen Introduction Approach**  
Robert O'Brien, Supra Research, Kelowna, British Columbia, Canada

2:20 PM **From Back to the Land to Burying the Land**  
Mitchell Colbert, Crocket, California, USA

3:00 PM BREAK

3:20 PM **Preventing Contamination: The Role of Good Manufacturing Practices (GMPs)**  
Steven Gendel, Gendel Food Safety LLC, Silver Spring, Maryland, USA

4:00 PM **USP Perspectives on the Limits of Contaminants in Cannabis**  
Nandakumara Sarma, U S PHARMACOPEIA (USP), Rockville, Maryland, USA

4:40 PM SYMPOSIUM DAY 2 ENDS

**THURSDAY, OCTOBER 12, 2023**

*(Note: All times are EDT)*

- 10:30 AM **Opening Remarks**  
Jimmy Farrell, ASTM Technical Committee Operations, W. Conshohocken, Pennsylvania, USA  
*Committee D37 Manager*
- SESSION 3: MICROBIALS, PESTICIDES and OTHER TOXINS**
- Session Chair:** Ralph Paroli, NRC Canada, Ottawa, Ontario, Canada
- 10:40 AM **Fungal Contamination Monitoring Using UHPLC-MS/MS**  
Vincent Desaulniers Brousseau, Health Canada, Ottawa, Ontario, Canada
- 11:20 AM **Market Audits Combat Cannabis Misinformation**  
Jeff Rawson, Institute of Cannabis Science, Cambridge, Massachusetts, USA
- 12:00 PM **Trajectory-Irrational to Rational: Online COMPENDIUM in 50 States and 5 Territories of Microbial Testing Regulations Speeds Identification of Issues in Developing a Consensus Set of Required Tests**  
Sherman Hom, Medicinal Genomics Corporation, Beverly, Massachusetts, USA
- 12:40 PM BREAK
- 1:00 PM **Residual Natural Constituents in Industrial Hemp**  
Keanan Stone, Federation of International Hemp Organizations, Calgary, Alberta, Canada
- 1:40 PM **In Search of a Multiresidue Method for Pesticides Control in Hemp-psychoactive and Recreational Cannabis Produced in Uruguay**  
Mónica Pereira, University of the Republic, Uruguay
- 2:20 PM **Agricultural Agents: How Laboratories Inability to Correctly Quantify Could be Putting Consumers at Risk**  
Jini Glaros, Modern Canna, Lakeland, Florida, USA
- 3:00 PM BREAK
- 3:20 PM **Enhancing Confidence in Microbial Contaminant Testing Through the Addition of Viability Test Solutions**  
Patrick Bird, bioMérieux, Hazelwood, Missouri, USA
- 4:00 PM **Panel Discussion: A Regulatory Perspective on Challenges in Cannabis Testing and Consumer Safety**  
*Moderator:*  
Gillian L. Schauer, Executive Director, Cannabis Regulators Association (CANNRA),  
Lexington, Kentucky, USA  
*Panelists:*  
Lori Dodson, Senior Advisor, Maryland Cannabis Administration, Linthicum, Maryland, USA  
John Kaba, Environmental Manager-Laboratories, Office of Medical Marijuana Use, Florida  
Department of Health, Tallahassee, Florida, USA  
Heather Krug, Regulatory Programs Branch Chief, Colorado State Public Health Laboratory,  
Denver, Colorado, USA

5:00 PM **Closing Remarks**  
David Vaillencourt, The GMP Collective, Colorado Springs, Colorado, USA  
*D37 Committee Vice Chair*

5:15 PM SYMPOSIUM ADJOURNS