

# Safety and Industrial Hygiene in the Marijuana Industry

Roberta Smith, RN, MSPH, CIC, CIH  
Occupational Health Program Manager  
Colorado Department of Public Health &  
Environment

[www.colorado.gov/cdphe](http://www.colorado.gov/cdphe)



# Disclaimer

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# Objectives

- Understand how health and safety stakeholders came together to produce a guideline for worker safety.
- Understand the challenges involved in identifying health and safety standards in a new industry.
- Describe hazards identified in the marijuana industry and how they are addressed in federal safety standards and regulations.

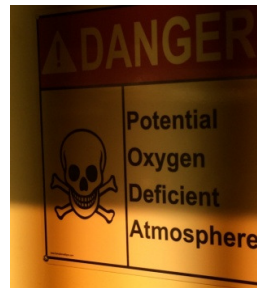
# Background

- Colorado Legalization
  - Passed in 2012, Implemented in 2013
  - Expanded beyond medical marijuana to recreational use, commercial grows and retail sales
  - “Basement growers” scaling up to warehouses
  - Hash oil explosions occurring in homes pose risk for large scale operations.
- A new industry was created
  - Aspects of retail, agriculture, manufacturing
  - OSHA oversight but no specific industry guidance.



# Worker safety & health concerns

- Colorado occupational health and safety community had much concern and wanted to be involved in assisting the new industry.
- March 2014, Marijuana Industries Health and Safety Workgroup was formed.
  - Primary output goal: A report that details best-practice guidelines and recommendations to protect and promote the health and safety of marijuana industry workers.
- Original Structure included 6 sub-work groups
  - Existing knowledge
  - Industrial hygiene
  - Local & Environmental health issues
  - Occupational medicine
  - Safety & Security
  - Wellness & Safety Culture



# Workgroup objectives

- Convene a broad-based stakeholder group (including industry) to solicit input on best practices
- Conduct on-site technical tours of marijuana growers, dispensaries, and infused product manufacturers
- Developing a comprehensive summary of occupational health and safety best practices
- Provide industry training

# Different perspectives

- IH professionals (CIH)- health focused
- Safety professionals (ASP, CSP)- safety focused
- Industry partners- legal expertise, operation focused
- Medical professionals- occupational medicine focused
- Insurance providers (TPAs)- claims related, workers' compensation focused



# Finding partners

- Occupational Health and Safety organizations
  - Local sections of ASSE, AIHA
  - Center for Health, Work and Environment (MAP ERC)
- Industry partners
  - Cultivation & extraction facilities
  - Industry group (legal)
  - Workers' Comp Insurers
  - Private Safety Consultants
- Local and Federal government partners
  - NIOSH
  - State & Local PH Departments
  - OSHA & OSHA consultation
  - State environmental programs (waste, air)
  - State Department of Agriculture

Colorado State University  
OSHA Consultation Services





# Identifying Hazards

**Hash Oil Blamed In Another Home Explosion**  
March 12, 2017 10:46 AM



(credit: Platte Canyon Fire Protection District)




(credit: Platte Canyon Fire Protection District)

Report published in January 2017:  
<https://www.colorado.gov/pacific/cdphe/marijuana-occupational-safety-and-health>

**Guide to Worker Safety and Health in the Marijuana Industry**

Marijuana Occupational Health and Safety Work Group  
January 2017

 **COLORADO**  
Department of Public Health & Environment

[colorado.gov/cdphe/marijuana-occupational-safety-health](https://www.colorado.gov/cdphe/marijuana-occupational-safety-health)

# Guideline Layout

- Background and Establishing a Safety and Health Program
  - Illness and injury notification and reporting
  - Establishing a safety and health program
  - Hierarchy of controls
  
- Guide to Worker Health and Safety
  - Section I: Hazards
  - Section II: Health and Safety Programs

# Hazard Categories Addressed

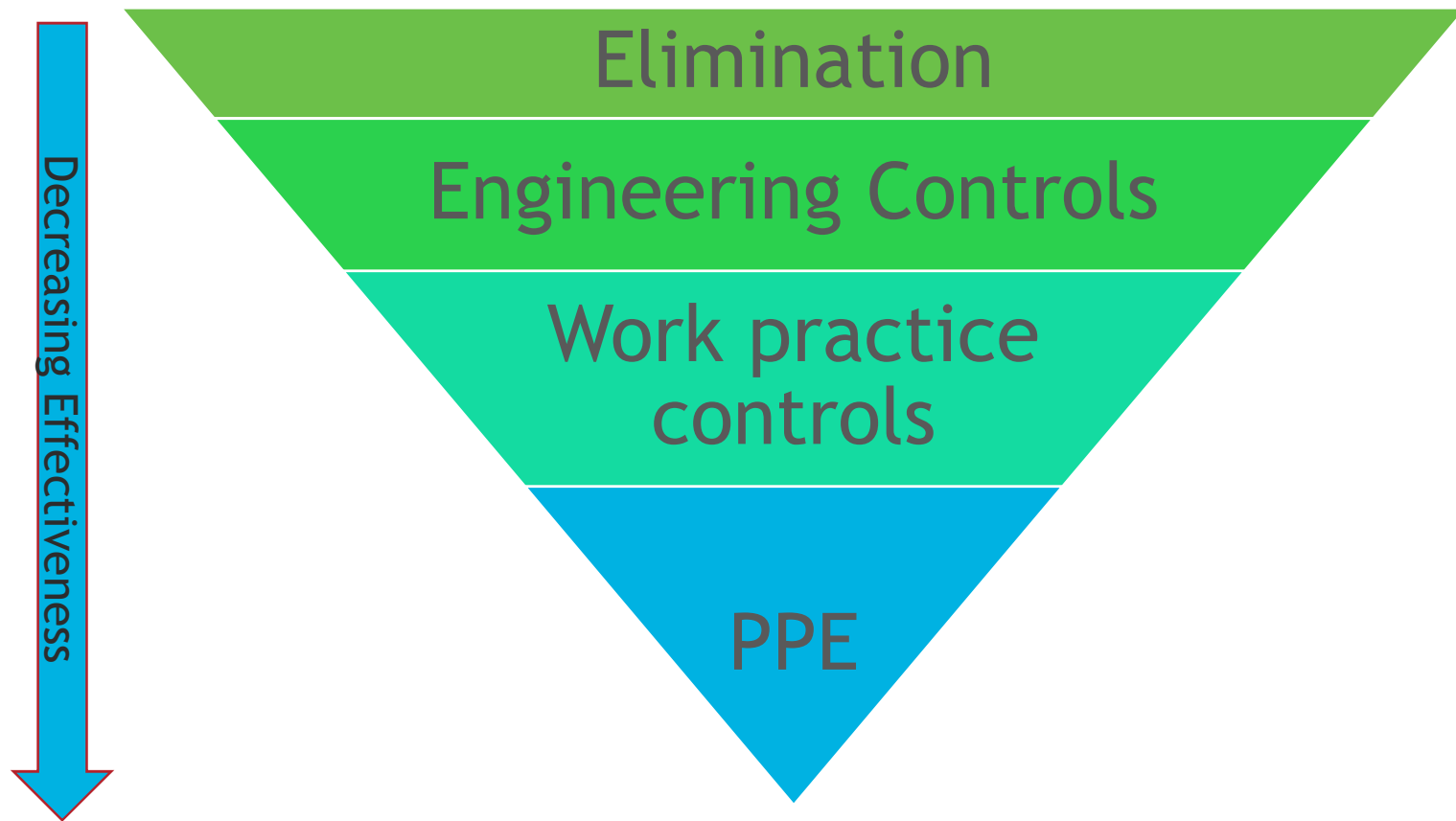
- Biological
- Chemical
- Physical



# Common occupations and potential hazards

| Job   | Duties   | Potential Hazards  |
|---|--|--|
| Cultivator  | Planting, transplanting, physically relocating plants, watering, nutrient mixing and feeding, mixing and applying pesticides, cleaning, harvesting plants, drying plants | Mold, sensitizers/allergens CO <sub>2</sub> , CO, pesticides/fungicides, ergonomics, walking/ working surfaces, lighting hazards, chemical exposures |
| Trimmer   | Trimming, packaging, shipping, data entry, cleaning  | Mold, sensitizers/allergens, CO <sub>2</sub> , CO, pesticides, ergonomics, occupational injuries (cuts), chemical exposures, machinery               |
| Extraction technician                                       | Extracting marijuana concentrates  | Machinery, IAQ, allergens, noise, ergonomics, chemical exposures, use of explosive/ flammable chemicals such as butane                               |
| Budtender   | Sales representative who sells marijuana and marijuana products to customers   | Sensitizers/allergens, ergonomics, workplace violence  |
| Edible producer, infused product confectioner/artisan/ chef | Cooking, baking, packaging, bottling, and labeling marijuana infused products  | Occupational injuries (burns), noise, chemicals  |

# Hierarchy of Controls



# Biological Hazards Addressed

- Mold
  - **Issue:** Nasal congestion, throat irritation, coughing, wheezing, eye irritation, skin irritation
  - **Controls:** Good housekeeping (moisture and dampness control), engineering controls (local and general exhaust ventilation), PPE
- Sensitizers/allergens (dermal)
  - **Issue:** Irritant contact dermatitis, Allergic contact dermatitis
  - **Controls:** Medical surveillance, good housekeeping, proper PPE
- Sensitizers/allergens (respiratory)
  - **Issue:** Itchy, runny, or congested nose; sneezing; coughing; wheezing
  - **Controls:** Engineering controls, proper PPE

# Harvesting Process









# Chemical Hazards Addressed

- Carbon dioxide (CO<sub>2</sub>)
- Carbon monoxide (CO)
- IAQ (volatile organic compounds)
- Pesticides
- Disinfectants/ cleaning chemicals
- Nutrients- Corrosives





| Products We Use   | Company                            | EPA Registration Number |  P-95 |  Half-Mask |  Chem Resistant Gloves |  Goggles |
|---|------------------------------------|-------------------------|--|---|---|---|
| Agus Bully  | Strills, LLC                       | 25(b)                   |  |   |   | X   |
| Ant Bully   | Strills, LLC                       | 25(b)                   |  |   |   | X   |
| Green Cleaner   | Central Coast Garden Products, Inc | 25(b)                   |  |   | X   | X   |
| Strike Em   | Flying Skull Plant Products        | 25(b)                   | X  |   | X   | X   |
| Strike Kapow!   | Pure Nutrients                     | 25(b)                   | X  |   |   | X   |
| NS 203 Concentrated Natural Pesticide Soil/Drench/Spray | Sierra Natural Science Inc.        | 25(b)                   | X  |   | X   | X   |
| NS 217 C All Natural Spider Mite Control Concentrate    | Sierra Natural Science Inc.        | 25(b)                   | X  |   | X   | X   |
| NS 244C   | Sierra Natural Science Inc.        | 25(b)                   | X  |   | X   | X   |
| NS 209C   | Sierra Natural Science Inc.        | 25(b)                   | X  |   | X   | X   |
| Organocide 3 in 1 Garden Spray                          | Organic Laboratory Inc.            | 25(b)                   | X  |   | X   | X   |
| Ed Rosenthal's Zero Tolerance (Fungus, Pest)            | Natural Garden Solutions, LLC      | 25(b)                   | X  |   |   | X   |
| Big Time Exterminator                                   | Apogee Garden Products Inc         | 25(b)                   | X  |   | X   | X   |
| Procidic Broad Spectrum Bactericide and Fungicide       | Greenspire Global, Inc.            | 25(b)                   | X  |   | X   | X   |



# Physical Hazards

- Compressed gases
- Occupational injuries
- Ergonomics, body mechanics
- Workplace violence
- Walking/ working surfaces
- Working at heights
- Electrical
- Noise
- Environment
- Powered industrial trucks (forklifts)
- Lighting hazards
- Machines
- Extraction equipment
- Confined spaces



# Physical Hazards



# OSHA Programs Outlined

- Hazard Communication Plan
- Hearing Conservation Plan
- Personal Protective Equipment Assessment
- Respiratory Protection Plan
- Lockout/ Tagout
- Fire Protection Plan
- Emergency Action Plan



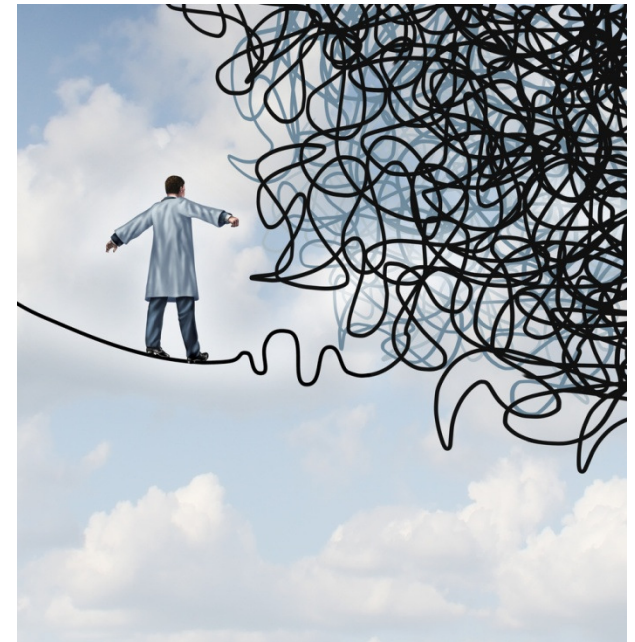
# Putting the Guide into Practice

- Partnership with guideline authors and the Center for Work, Health and Environment to develop a training for marijuana workers.
- June 28, 2017
- High level overview with experts from OSHA, insurance providers, and industrial hygiene and safety experts.



# Challenges with the Process

- Stakeholder management & engagement
- Vastly different scales of industry
- Politics & priorities
- Change in leadership
- Writing as one voice



# Contact

Roberta Smith

Manager, Occupational Health Program

Colorado Department of Public Health & Environment

[roberta.smith@state.co.us](mailto:roberta.smith@state.co.us)

