

# NIOSH Health Hazard Evaluation at an Organic Cannabis Farm

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**The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention and the National Institute for Occupational Safety and Health.**

# NIOSH Health Hazard Evaluation: Harvesting and Processing Cannabis at an Organic Farm

- ❑ In June 2015, the United Food and Commercial Workers International union made an HHE request to NIOSH
- ❑ Conducted 2 site visits in 2015



# NIOSH HHE: Harvesting and Processing Cannabis at an Organic Farm

## □ Farm:

- Operated by the owner and three employees
- Five acres
- Grew pesticide-free cannabis
- Grew *Cannabis sativa*, *Cannabis indica*, and a hybrid
- 40 plants (over 8 feet tall; over 6 feet wide) grown in hoop houses

# NIOSH HHE: Harvesting and Processing Cannabis at an Organic Farm

## □ Site visit activities:

- Observed work practices
- Conducted confidential medical interviews
  - Work history
  - Use of personal protective equipment
  - Any symptoms when working with cannabis
  - Long-term health and safety concerns related to their job

# NIOSH HHE: Harvesting and Processing Cannabis at an Organic Farm

## □ Site visit activities:

- Performed ergonomic evaluations on specific tasks
  - Measured pinch force used to pull leaves off stems
  - Measured force to remove bud with trimming scissors
  - Evaluated repetitive motion of the hand and fingers during final hand trimming
- Collected air samples for microbial and endotoxin analysis
- Collected surface wipe samples for THC



Bud snipping force was estimated by having the employee reproduce the force with the handles of the scissors transmitting the force to the pinch gauge



An employee harvesting cannabis.



Employee performs "big leafing" from a stem as it hangs on a line.



An employee removes the flower from the stem by pulling the stem through a small, drilled hole in a tin can.



An employee in the final stage of flower hand trimming.

# **NIOSH HHE: Harvesting and Processing Cannabis at an Organic Farm: Findings**

- ❑ Employees did not report any work-related symptoms**
- ❑ Employees were concerned about repetitive hand motions from trimming cannabis**
- ❑ Some hand trimming activities required a lot of hand motions, but not a lot of force**

# NIOSH HHE: Harvesting and Processing Cannabis at an Organic Farm: Findings

- ❑ **We found THC on every surface wipe sample**
  - 0.17 to 210 micrograms per 100 cm<sup>2</sup>
- ❑ **Predominant fungus identified was *Botrytis cinerea***
  - Plant pathogen that can cause allergic reactions
  - Associated with Wine Grower's Lung
- ❑ **Endotoxin concentrations were all below the Dutch Expert Committee on Occupational Safety OEL of 90 EU/m<sup>3</sup>**
  - 2.8 to 37 EU/m<sup>3</sup>

# **NIOSH HHE: Selected Recommendations**

- ❑ As the workforce grows, develop a job rotation plan to move employees around to jobs that require using different muscle groups**
- ❑ Develop a surface cleaning schedule to remove THC from work and tool surfaces**
- ❑ Eliminate the tin can bud removal method**
- ❑ Remove the netting surrounding plants during harvesting so employees are not in awkward positions**

## **NIOSH HHE: Final Report**

- ❑ **NIOSH HHE: Harvesting and Processing Cannabis at an Organic Farm**
  - Released April 2017
- ❑ **Available at: <https://www2a.cdc.gov/hhe/search.asp>**
  - Search word: "cannabis"
- ❑ **Learn more about the NIOSH HHE Program at: <https://www.cdc.gov/niosh/hhe>**

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