

Beyond the cultivating and harvesting

*Helping to keep you safe during cannabis
growing, harvesting and processing operations*

With the legalization of cannabis growing, harvesting and processing operations by the Canadian government, licensed operators and workers in cannabis manufacturing operations will need to follow relevant health and safety laws to protect themselves from exposure hazards that could cause immediate and long-term health effects. Do you know how to keep yourself safe from the occupational risks in cannabis-growing operations?

We've spent decades giving you the information that you need to spot potential risks while improving respiratory protection products that help keep you out of harm's way. Here's an overview of what workers need to know to help reduce their exposure and help minimize immediate and long-term health effects associated with the growing, harvesting and processing of cannabis.



Magnification of Cannabis

What is cannabis?

Cannabis is a greenish-grey mixture of the dried flowers of the cannabis sativa plant. The main psychoactive chemical in cannabis is delta-9-tetrahydrocannabinol (THC), which is responsible for its intoxicating effects. This chemical is found in the resin produced by the leaves and buds of the cannabis plant. The plant also contains more than 500 other chemicals, including over 100 compounds that are chemically related to THC called cannabinoids.

Cannabis can be inhaled by smoking hand-rolled cigarettes called *joints*, in pipes or water pipes called *bongs*, or in *blunts* (cannabis rolled in cigar wraps). It can also be ingested through brewed tea or mixed into foods called *edibles*, such as brownies, cookies or candies.

How could it affect me?

The Canadian federal government introduced a suite of legislation on April 13, 2017, that establish a "strict legal framework" for the production, sale, distribution and possession of cannabis. Provinces, territories and municipalities will be able to tailor rules for their own jurisdictions and set their permits or licenses for growing, distributing and retail sales of cannabis. This legislation was passed in October 2018. This means that workers who take part in cannabis growing, harvesting and processing could be exposed to numerous health and safety risks and are covered by the applicable occupational health and safety regulations.

When am I at risk?

Workers who take part in the growing, harvesting and processing of cannabis products have the potential to be exposed to the following health risks:

- ▶ Mould exposures in indoor growing and harvesting operations
- ▶ Drug exposure to THC while handling plant buds, which can occur through inhalation, eye or dermal contact
- ▶ Exposures to pesticides and fertilizers
- ▶ Excessive carbon dioxide (CO₂) exposure in greenhouses with optimized growing environments, i.e., CO₂ is being added to the environment to promote plant growth
- ▶ Accidental carbon monoxide (CO) and oxides of nitrogen (NO_x) exposure from CO₂ producing devices, i.e., in order to raise CO₂ concentrations some companies may direct products of incomplete combustion, which can include CO₂, into the plant grow areas
- ▶ Exposures to solvents which may be used in processing operations
- ▶ Excessive ultraviolet (UV) exposure from grow lamps
- ▶ [Heat stress](#) in outdoor growing operations

Other safety risks in cannabis-growing operations can include electrical shock and/or cuts, pinches and sprains suffered during harvesting or processing operations.

What can I do to help protect myself?

Reduce exposures to mould, pesticides and other chemicals

Proper [respiratory protection](#) should be used during growing and harvesting operations to help reduce potentially harmful exposure to mould, pesticides and other chemicals. Respiratory protection selection and use should be based on results of air monitoring, in compliance with the assigned protection factors (APFs) outlined in the CSA Z94.4 standard or other published selection document that the province follows (such as NIOSH & USA OSHA). Based on the employer's exposure assessment, an N-95 or P-100 disposable respirator, or half-face piece or full-face piece respirator with a combination organic vapour cartridge/P100 filter, may provide appropriate protection.

- ▶ [3M™ Aura™ Particulate Respirator, 9211+, N95](#)
- ▶ [3M™ Particulate Respirator, 8511, N95](#)
- ▶ [3M™ Particulate Respirator 8293, P100](#)
- ▶ [3M™ Quick Latch Rugged Comfort Half Facepiece Reusable Respirator, 6502QL](#)
- ▶ [3M™ Ultimate FX Full Facepiece Reusable Respirator, FF-402](#)
- ▶ [3M™ Organic Vapour Cartridge/Filter, 60921](#)

Maintain proper ventilation

This will help avoid overexposure to gases such as carbon monoxide, carbon dioxide and nitrous oxides as air purifying respirators will not provide protection against these three gases. Overexposure to these gases remains an acute concern if CO₂ producing devices are not monitored or maintained properly in the manufacturing operation.

Protect eyes from contact with THC, pesticides and other chemicals

Employers should consider the need for [protective eyewear](#), protective eyewear with a face shield, or a full-facepiece respirator. If workers are not required to wear a full-facepiece respirator for pesticide spraying, employer may determine that indirect venting goggles should be used.

- ▶ [3M™ SecureFit™ Protective Eyewear 600 Series with Grey Scotchgard™ Anti-Fog Lens, SF602SGAF](#)
- ▶ [3M™ Solus Protective Eyewear with Grey Scotchgard™ Anti-Fog Lens, S1102SGAF, Black/Blue](#)
- ▶ [3M™ Goggle Gear, 500-Series with Clear Scotchgard™ Anti-fog Lens](#)


Prevent skin contact with THC during cutting and harvesting operations

This will help reduce the risk of dermal exposure to THC, pesticides and fertilizers. Protective coveralls, lab coats, aprons, footwear and especially gloves should be considered during cutting and trimming operations, and during the application of pesticides or fertilizing chemicals. In outdoor operations, the potential for increased risk of heat stress should be considered when selecting worker protective clothing.

References

1. Washington State Department of Labor & Industry. Cannabis Industry Safety & Health (Cannabis). Retrieved on October 19, 2017 from <http://www.lni.wa.gov/Safety/Topics/Industries/Marijuana/>
2. Martyny, John; Van Dyke, Mike; Schaeffer, Josh; Serrano, Kate Health Effects Associated with Indoor Cannabis Grow Operations. Division of Environmental and Occupational Health Sciences, Department of Medicine, National Jewish Health, Denver, CO.
3. Koch, Thomas; Chamber, Carol-Lynn; Bucherl, Stacy; Martyny, John; Cotner, John; and Thomas, Stan. Colorado Environmental Health Association Conference, Steamboat Springs, CO., Hashing Out the Issues: IAQ and Health and Safety in the Cannabis Industry, September 26, 2014.
4. Clandestine Indoor Cannabis Grow Operations – Recognition, Assessment, and Remediation Guidance, AIHA. January 1, 2010.
5. 3M Personal Safety Division. Technical Data Bulletin #249: Legal Cannabis Growing Operations. September, 2016. Retrieved from <multimedia.3m.com/mws/media/.../tdb-249-legal-cannabis-growing-operations-pdf>
6. Sun Media, Toronto Sun. What to expect from the Liberals' Cannabis bill. April 13, 2017.

Contact us for more information on how to help stay safe during cannabis growing, harvesting and processing operations.

 WARNING
<p>These respirators help reduce exposures to certain airborne contaminants. Before use, the wearer must read and understand the User Instructions provided as a part of the product packaging. A written respiratory protection program must be implemented meeting all the requirements of OSHA 29 CFR 1910.134 including training, fit testing and medical evaluation. In Canada, CSA standards Z94.4 requirements must be met and/or requirements of the applicable jurisdiction, as appropriate. Misuse may result in sickness or death. For proper use, see package instructions, supervisor, or call 3M Personal Safety Division Technical Service in USA at 1-800-243-4630 and in Canada at 1-800-267-4414.</p>