Testimony in Opposition to LD 1567

Joel Pepin – Co-Founder, JAR Cannabis Company
Veterans and Legal Affairs Committee | May 5, 2025

Senator Hickman, Representative Supica, and honorable members of the VLA Committee:

My name is Joel Pepin, and I'm the co-founder of JAR Cannabis Company. I'm here today to strongly oppose LD 1567. Our company owns an X-ray machine manufactured by RAD Source Technologies. It is UL listed, FDA-cleared, and inspected and licensed annually by the Maine DHHS Radiation Control Program. It is regulated in the same way that X-ray equipment in hospitals is regulated. We are one of dozens of Maine operators utilizing this technology. Nation-wide organizations such as the American Red Cross also use the same technology to safely decontaminate blood.

The debate over decontamination equipment is a symptom of a larger issue—which is Maine's extremely strict microbial testing standards. If we want to reduce the use of X-ray and ozone in Maine's Cannabis Program, then let's raise the microbial CFU threshold, which is also on the docket today. Until then, the bill in front us, should not move forward.

Proponents argue that radiation is unsafe, despite there being no scientific evidence supporting such claims. Furthermore, there is no scientific data demonstrating that this labeling requirement addresses any public health or safety need. In fact, the FDA has found that irradiation labels can confuse or alarm consumers. More importantly, adult use cannabis products already carry a required warning label. This bill is not about public health; it's about perception and politics.

Proponents of the bill, also cite the danger of treating Maine cannabis with gamma ray radiation. This claim is blatantly false and intentionally misleading. No operator in Maine uses gamma rays, which come from radioactive isotopes. What's being used is ionizing X-ray technology—non-radioactive energy waves that safely deactivate living microbial DNA.

This isn't about employee safety either. In fact, indoor grow lights, which are deemed quite safe, emit higher levels of radiation than the levels measured in the room where these x-ray machines operate. In fact, there are no increased levels of radiation measured in the rooms where these machines operate. Higher levels of radiation are detected in rooms inside brick or granite buildings, like this room. If we apply this same logic to other industries in Maine, then why doesn't this bill also require dental patients to wear a shirt that says, "treated by X-ray" after leaving the dental office? That's the level of stigma this bill introduces. And furthermore, if transparency were truly the goal, any operator—medical or adult use—could

voluntarily label their product as "not treated with X-ray or ozone." But that's not what this bill is about. It's about damaging the credibility of the regulated market. The economic cost is real. An estimated 50% or more of adult use flower is treated with these methods. In 2024, the state collected $27 million in excise and sales tax revenue from adult use cannabis. If you all choose to stigmatize clean cannabis treated by this technology, that never failed a required mandatory test, then the State of Maine should expect to see a sharp decline in up to $13 million annually. Worse, it would drive consumers to the unregulated market—where there are no safety standards at all.

No other regulated cannabis program in our country requires the labeling requirements proposed in this bill. This bill would be detrimental to Maine's cannabis legacy. I urge the committee to reject LD 1567. It is unscientific, unnecessary, and harmful to Maine's regulated cannabis industry.

Thank you,

Joel Pepin

The Maine Adult Use Cannabis Program only requires testing for mycotoxins after an initial batch of cannabis fails for testing. This was likely established to reduce testing costs for the industry by our regulators. If a batch of cannabis fails for yeast and mold, gets remediated and then retested, a mycotoxin test must be passed before the batch can be sold. Since the AU program has been established in 2020, there have been 408 and retests for remediated cannabis flower and 0 instances of mycotoxin detection. No failed cannabis batch has ever tested positive for mycotoxins according to OCP's data, which found here

https://www.maine.gov/dafs/ocp/open-data/adult-use/testing-data

What Is a Mycotoxin?

A **mycotoxin** is a **toxic chemical compound produced by certain types of mold (fungi)** that can grow on crops, food, and plant-based materials, especially under warm and humid conditions.

Where Do Mycotoxins Come From?

They are produced by mold species such as:

- **Aspergillus**
- **Penicillium**
- **Fusarium**

Can Irradiation Release Mycotoxins in Cannabis?

No, irradiation does not release or generate mycotoxins — but it also **does not remove** them if they are already present.

What Irradiation (X-ray or Electron Beam) Does

- **Kills or inactivates living microbes** (e.g., mold, yeast, bacteria) by damaging their DNA.
- Prevents **further growth** of these organisms on the product.
- Makes the product **microbiologically safer and more shelf-stable.**

What Irradiation Does NOT Do

- It does **not destroy pre-existing mycotoxins** that may have been produced *before* the mold was inactivated.
- It does **not cause mold to produce toxins** during the process — because irradiation stops metabolic activity and reproduction.

Key Scientific Consensus

- According to multiple food and pharmaceutical studies:
    - **Mycotoxins are chemically stable** and **not easily broken down** by heat, radiation, or standard decontamination methods.
    - This is why **prevention and early detection** of mold are so critical.
- However, **irradiating clean or early-stage contaminated cannabis can prevent toxin-producing mold from developing further.**
- **Irradiation (like X-ray or e-beam) does not trigger the release of mycotoxins.** It inactivates the mold, preventing toxin production going forward. However, if

mycotoxins are already present before treatment, they will remain in the product — which is why comprehensive testing and early microbial control are essential.

From the Physicist hired by the State of Maine who inspects our unit annually:

As a registrant of a radiation-producing device in Maine, your facility is subject to the requirements outlined in the **10-144 CMR Chapter 220** regulations, specifically Parts D, E, and H.

Overview of Applicable Regulations

Part D – Standards for Protection Against Radiation

This section establishes comprehensive safety standards to protect workers, the public, and the environment from radiation exposure. It includes:

- Occupational dose limits
- Radiation protection programs
- Monitoring and recordkeeping requirements
- Posting and labeling of radiation areas
- Reporting and notification protocols

Part E – Radiation Safety Requirements for Industrial Radiographic Operations

This part applies to facilities using radiation for industrial radiography and outlines:

- Equipment performance standards
- Personnel training and certification
- Operating and emergency procedures
- Inspection and maintenance protocols
- Recordkeeping and reporting obligations

Part H – Radiation Safety Requirements for Analytical and Other Industrial Radiation Machines

This section covers analytical and industrial radiation machines not addressed in other parts, detailing:

- Equipment design and safety features
- Warning devices and labeling
- Operating procedures and area requirements
- Personnel qualifications and training
- Inspection and maintenance schedules

These regulations ensure that radiation-producing devices are operated safely and in compliance with state standards.

For the complete text of these regulations, you can refer to the official Maine Radiation Protection Regulations:

- Radiation Protection Regulations – Maine Secretary of State

Definition of Gamma Radiation

Gamma radiation is a type of **electromagnetic radiation**—similar to X-rays, but with **higher energy and shorter wavelength**. It is emitted from the **nucleus of unstable (radioactive) atoms** as they decay into more stable form

Definition of Radioactive

Radioactive refers to a material or substance that **spontaneously emits radiation** due to the **instability of its atomic nucleus**. This process is called **radioactive decay**.

What Makes Something Radioactive?

An atom is radioactive when its **nucleus has too much energy or an imbalance of protons and neutrons**. To become more stable, the nucleus **releases energy** in the form of radiation. This radiation can be:

- **Alpha particles** (heavy, positively charged)
- **Beta particles** (light, negatively or positively charged)
- **Gamma rays** (high-energy electromagnetic radiation)

Examples of radioactive materials: Uranium-238, Plutonium-239, Cobalt-60, Cesium-137, Radon gas.

Important Distinction

- A substance can be **irradiated** (exposed to radiation) without being **radioactive**.
- For example: **Food or cannabis treated with X-rays is not radioactive**, just as people receiving an X-ray do not become radioactive afterward.

Gamma radiation is high-energy electromagnetic radiation released from the nucleus of radioactive atoms during decay. A substance is considered radioactive if it naturally emits this type of radiation due to an unstable atomic nucleus. However, using radiation to decontaminate food or cannabis, or during medical X-rays, does not make the treated product or person radioactive.

Definition of Ionizing X-ray Irradiation

Ionizing X-ray irradiation refers to the use of high-energy **X-ray photons** to **kill or deactivate microbes**—like bacteria, mold, and yeast—by **disrupting their DNA or cellular structures**. It is a **form of ionizing radiation**, meaning it has enough energy to remove electrons from atoms or molecules, effectively damaging or destroying living cells.

Key Characteristics

- **Type of radiation**: X-rays (non-radioactive, electromagnetic energy)
- **Mechanism**: Breaks molecular bonds in microbial DNA, rendering them nonviable
- **Does not leave residue**: The treated product is **not radioactive**
- **Applications**: Widely used in **medical imaging**, **food safety**, **blood sterilization**, and **cannabis remediation**
- **Regulated Use**: Machines are typically **UL Listed**, FDA-cleared, and inspected by state health departments

Definition of Radiation

Radiation is the **emission or transmission of energy** in the form of **waves or particles** through space or a material medium. It can be either **non-ionizing** (low energy) or **ionizing** (high energy), depending on its ability to remove electrons from atoms.

Two Main Types of Radiation

1. **Non-Ionizing Radiation**
   - Low energy
   - Does **not** have enough energy to ionize atoms
   - Examples: **Visible light, microwaves, radio waves, infrared, ultraviolet (low levels)**
   - Common in: **Sunlight, grow lights, cell phones, heat from drying rooms**
2. **Ionizing Radiation**
   - High energy
   - **Can remove electrons** from atoms, potentially causing biological damage
   - Examples: **X-rays, gamma rays, alpha and beta particles**
   - Used in: **Medical imaging, cancer therapy, food and cannabis decontamination**

Key Clarification

- **Radiation is not inherently dangerous** — it depends on the **type, dose, and context**.
- For example, **light and heat** are both forms of radiation that we safely encounter every day.
- **Irradiated products are not radioactive** — being exposed to radiation doesn't make something emit radiation.