

# **METHODS FOR CANNABIS DECONTAMINATION:** *WHY X-RAY STANDS ABOVE THE REST*



Ensuring cannabis meets strict microbial testing standards is a challenge for cultivators, making the choice of decontamination method a critical decision. While several technologies are available—each with its own advantages and limitations—not all provide a balance between microbial elimination and product preservation. To understand why X-ray technology, particularly the SteriRad system by Precision X-Ray Inc., stands out as the most effective and reliable option, it's important to first explore how it compares to other commonly used methods.

#### Gamma Irradiation •

Gamma irradiation is one common method that effectively kills microbes without altering potency or terpene profiles. However, the use of radioactive isotopes poses significant safety risks, requiring costly licensing, extensive regulatory compliance, and strict security measures. Unlike gamma, X-ray technology does not rely on radioactive materials, making it a safer, more sustainable option without the burden of complex regulatory oversight.











#### • E-Beam Irradiation



E-beam irradiation offers rapid processing times, but its low penetration power means it typically only eliminates surface contaminants. Deep-seated microbes can survive within the flower, potentially leading to contamination issues down the line. In contrast, X-ray technology penetrates deep into the flower, ensuring a thorough decontamination process that prevents microbial regrowth and guarantees longterm safety.

#### Radiofrequency Decontamination •

Radiofrequency decontamination relies on electromagnetic energy to vibrate water molecules which generates heat, killing microbes within the cannabis. However, this process is highly dependent on moisture levels, which means dry areas of the flower may not be properly treated. Additionally, RF can overheat the product and negatively impact its potency, appearance, aroma, and taste. X-ray technology, on the other hand, does not rely on heat, preserving the flower's natural characteristics while ensuring complete decontamination.



## • Ozone Decontamination

Ozone decontamination is another method used in the industry, exposing cannabis to ozone gas in a sealed chamber. While effective against surface microbes, ozone fails to reach contaminants deep within the flower, allowing hidden microbes to survive and continue growing after treatment. Moreover, ozone can oxidize the surface of the flower, altering its color, aroma, and potency. It also poses health risks to employees handling the gas. With X-ray decontamination, no chemical exposure is necessary, ensuring both worker safety and product integrity.







#### **X-Ray Decontamination •** (Photonic Decontamination)

X-ray technology has long been trusted in medical and food safety settings for its ability to deliver precise, non-destructive microbial decontamination—and it's quickly becoming the gold standard in cannabis. Unlike other methods, X-ray decontamination offers deep penetration without the use of heat or chemicals, making it ideal for preserving the delicate compounds in cannabis flower.

SteriRad, Precision X-Ray Inc.'s cannabis decontamination X-ray system, takes the proven science of photonic sterilization and optimizes it for cultivation environments. What sets SteriRad apart is its combination of effectiveness, safety, product reliability, preservation, and tailored specifically for realworld grow operations.



SteriRad's deep-penetration X-ray technology ensures full-spectrum decontamination by reaching and neutralizing pathogens not only on the surface, but also deep within dense flower structures and through various types of final packaging. This comprehensive reach provides a more reliable decontamination process than methods limited to surface-level contact, giving cultivators confidence that microbial regrowth won't occur.









### X-Ray Decontamination •

X-ray systems operate without heat or chemical agents, preserving the natural appearance, aroma, potency, and terpene profile of the cannabis. SteriRad is specifically engineered to preserve what matters most. Its optimized X-ray source-to-product distance minimizes any risk of heat exposure, and its gentle, even application ensures that cannabinoids and terpenes remain intact. The product comes out looking, smelling, and performing just as it should—only cleaner.



With its proprietary Slow Roll technology and advanced microbial reduction software, the system delivers uniform exposure without tumbling or damaging the buds. Featuring the largest cannister on the market, SteriRad excels in efficiency and ease of use. Cultivators simply load the drums with harvested flower, press start, then "Set It and Forget It". Designed for 24-hour continuous operation, SteriRad supports high-throughput environments-decontaminating 1,400-4000 lbs of flower per month\*

Backed by Precision X-Ray Inc.'s unmatched service record, SteriRad isn't just a decontamination tool—it's a long-term partner in your cultivation success. With over 1,600 X-ray systems installed worldwide, the technology is proven, the results are reliable, and the support is always there when needed. For cultivators seeking to protect their product, preserve its integrity, and pass every test with confidence, SteriRad is the gold standard in cannabis decontamination.

\*Throughput depends on starting microbial levels, state requirements, and weight of cannabis per cycle





