



# ProGuard

## *SANITIZATION TECHNOLOGY*

Thailand Authorized Importer/Distributor



[contact@greengrows.com](mailto:contact@greengrows.com)

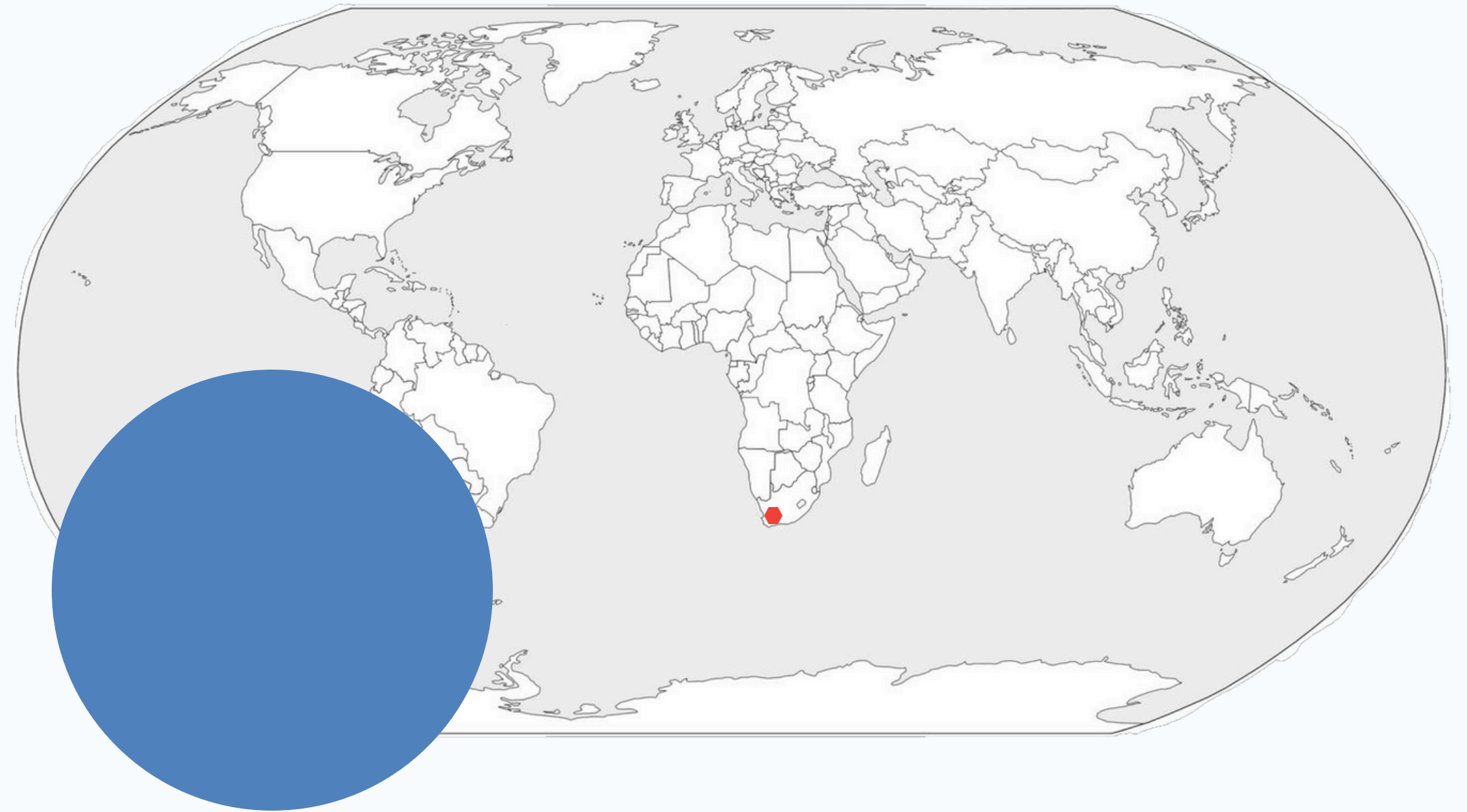
[www.greengrows.com](http://www.greengrows.com)





## Projects in Process

- United States
- Canada
- Israel
- Australia
- Columbia
- Portugal
- Puerto Rico
- Netherlands
- Spain
- Switzerland
- Thailand
- South Africa
- UK
- Macedonia
- France



- Indoor Grow/ Greenhouses
- Food Safety
- Medical Facilities
- Bio Tech Clean Rooms
- Office Buildings

# Solves Problems for Indoor/Greenhouse Cannabis Growers



## ProGuard Seeks & Destroys

- Molds
- Mildew
- Bacteria
- Viruses
- Reduce CFU's to meet GACP and EU GMP requirements

**ProGuard Does Not Impact Terpenes**

# ProGuard Protects Post Harvest Areas



## Protects:

- Post Harvest areas
- Trim rooms
- Packaging
- Extraction
- Corridors
- Storage
- Labs

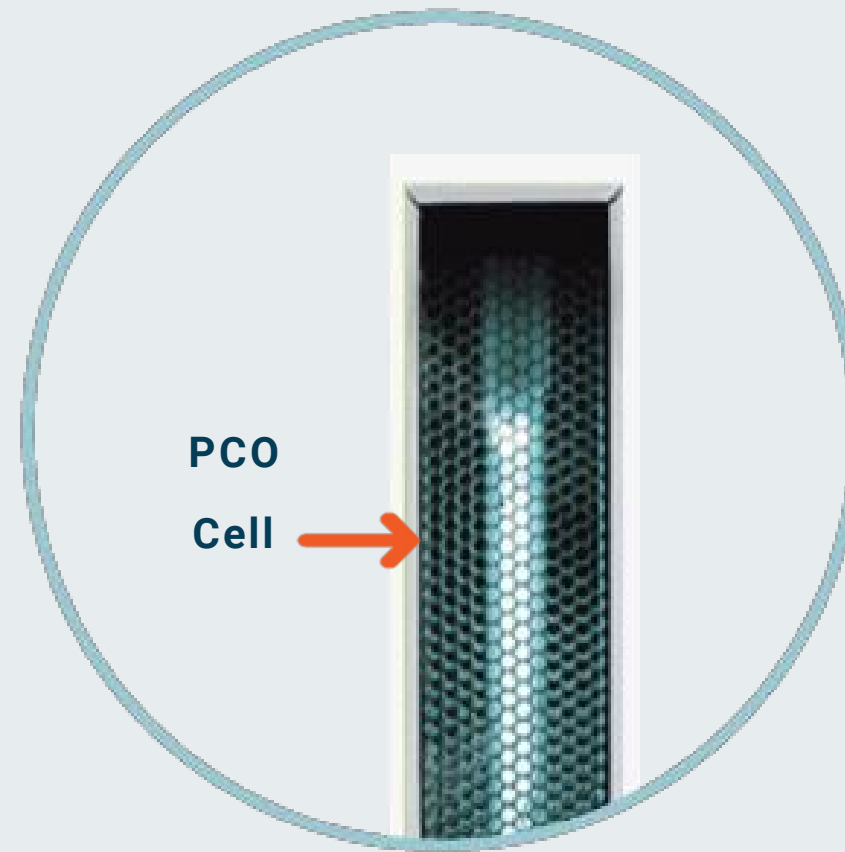
**SAFE** for Humans and Plants  
**Does Not Impact Terpenes**



# ProGuard Sanitization Process



## Photo Catalytic Oxidation



Uses a **catalytic process to create advanced oxidation AND high energy ionization** to manage contaminants in the air and surfaces

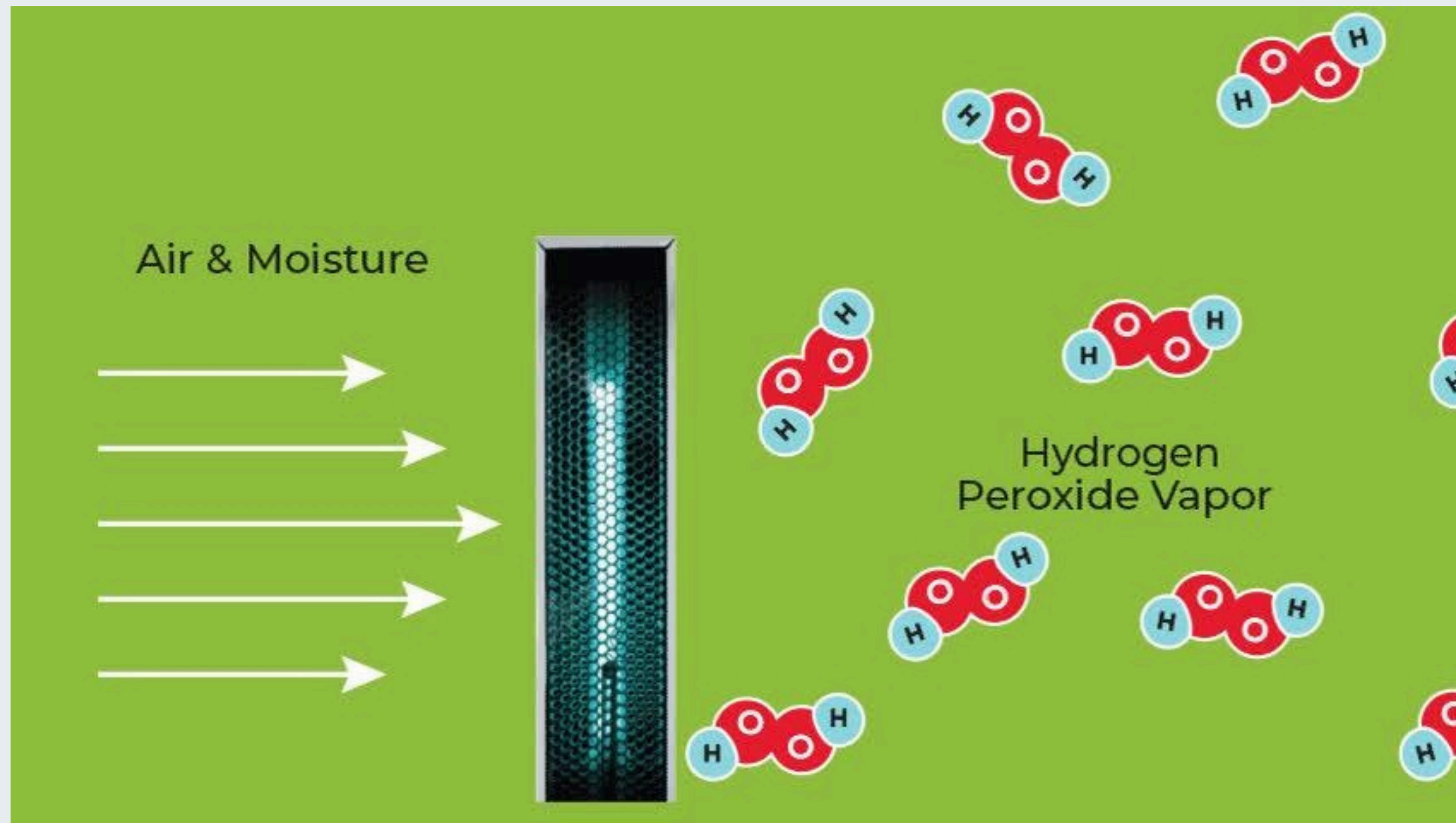
\*Originally developed by  
NASA



# ADVANCED (ARC-PCO) PROCESS

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Advanced (ARC-PCO) Process **Creates Millions** of Ionized H<sub>2</sub>O<sub>2</sub> Clusters **Eliminating** Mold, Mildew, and Bacteria





# ProGuard BPI Sanitization Process

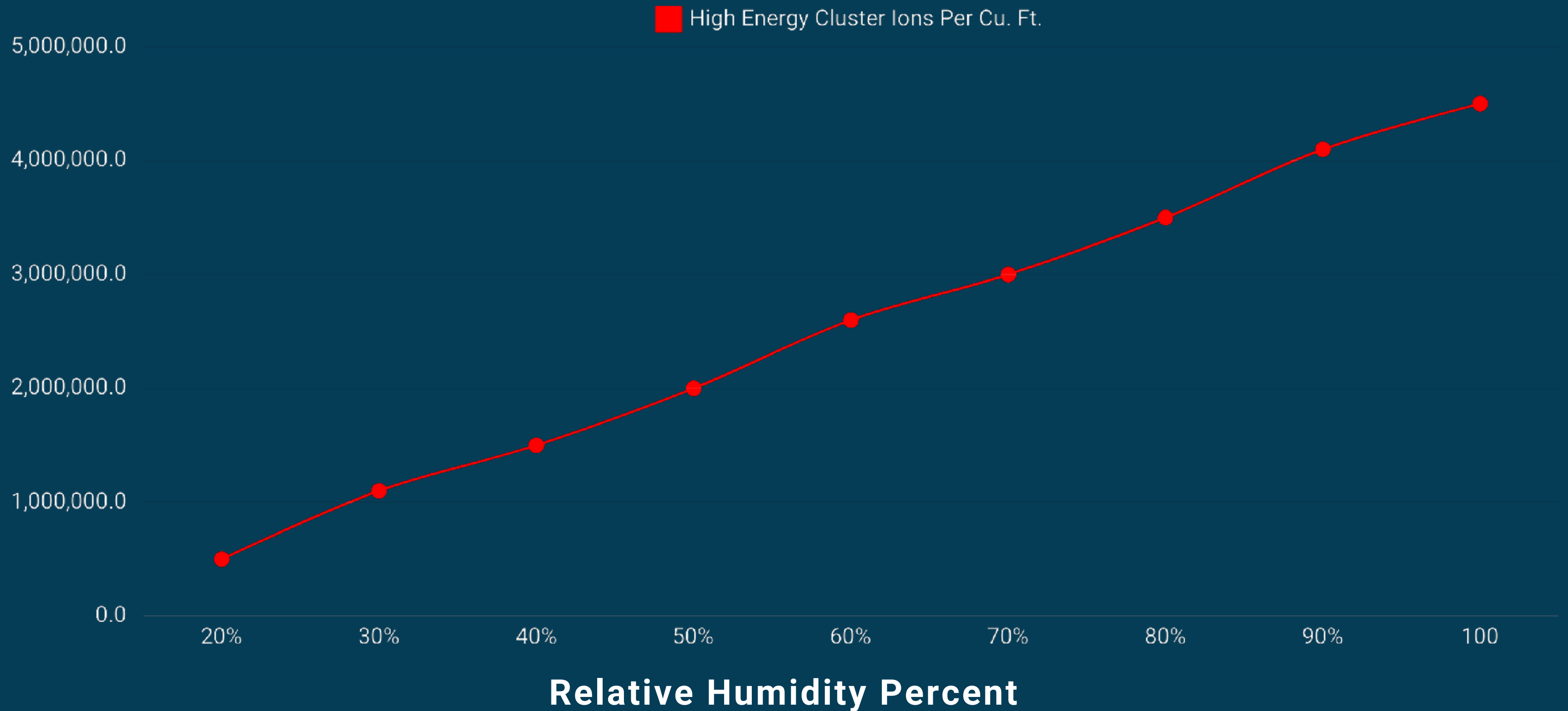


**Our advanced sanitization technology uses Bi-Polar Ionization (BPI), an ionization process that ensures highly effective air sanitization.**

**As our second layer of defense, BPI is specifically engineered to excel in high-humidity environments, making it ideal for cannabis cultivation and other challenging environments.**



# ProGuard Performance Related to Humidity





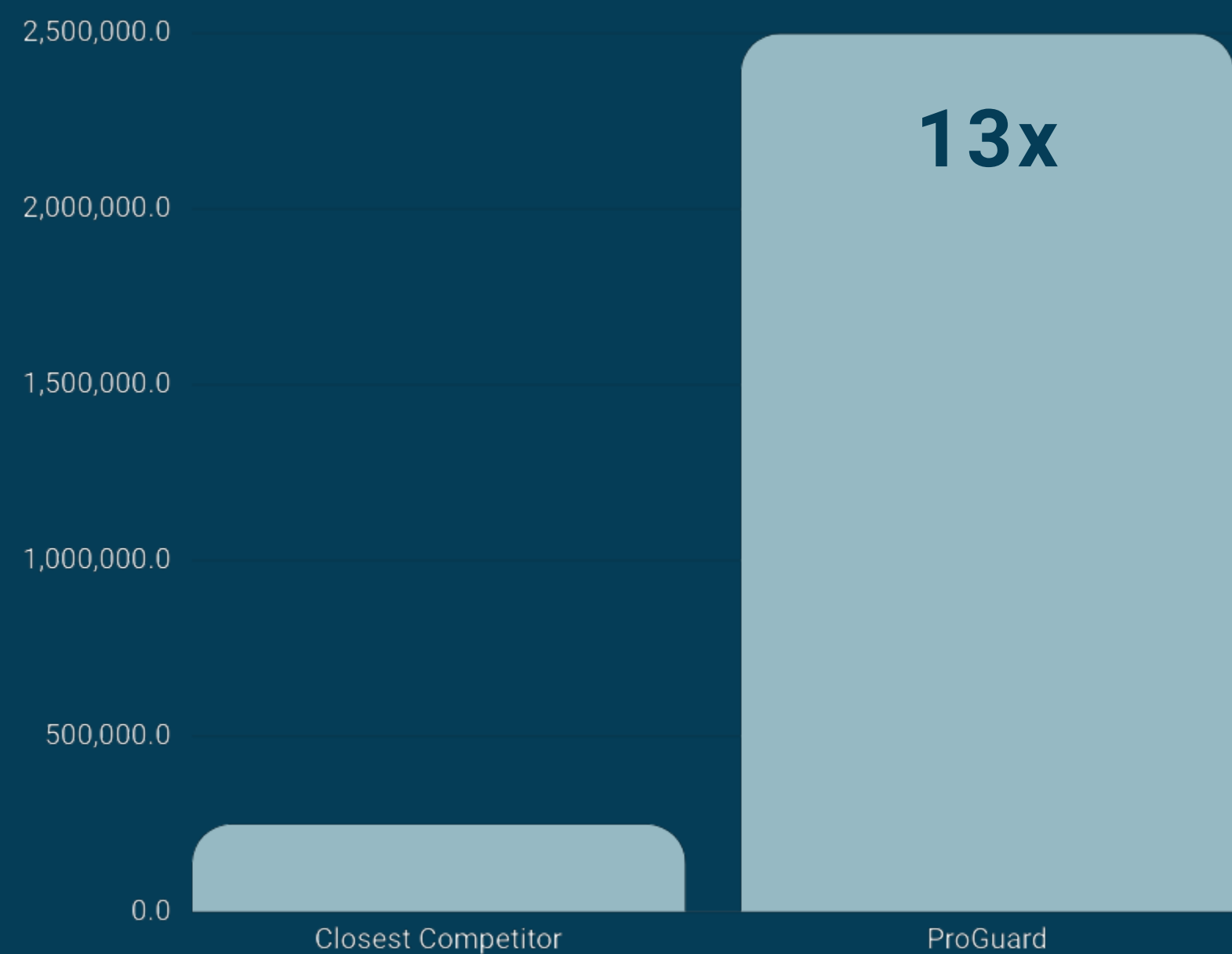
# ProGuard / BPI Technology- NORMI STUDY

The **National Organization of Remediators** and Mold Inspectors, (**NOR MI**) trains mold and indoor environmental professionals, providing over 14 certifications to meet licensing laws.

CONFIGURATION	NEGATIVE IONS/C3CM	POSITIVE IONS/C3CM
Test 1 Competitive Brand PCO	1 50 ,0 00	6 ,0 00
Test 2 Competitive Brand PCO	1 40 ,0 00	24,000
Test 3 ProGuard Brand ARC-PCO & BPI	800,000	1,200,000

# ProGuard/BPI Technology Output Comparison

## Ion Output

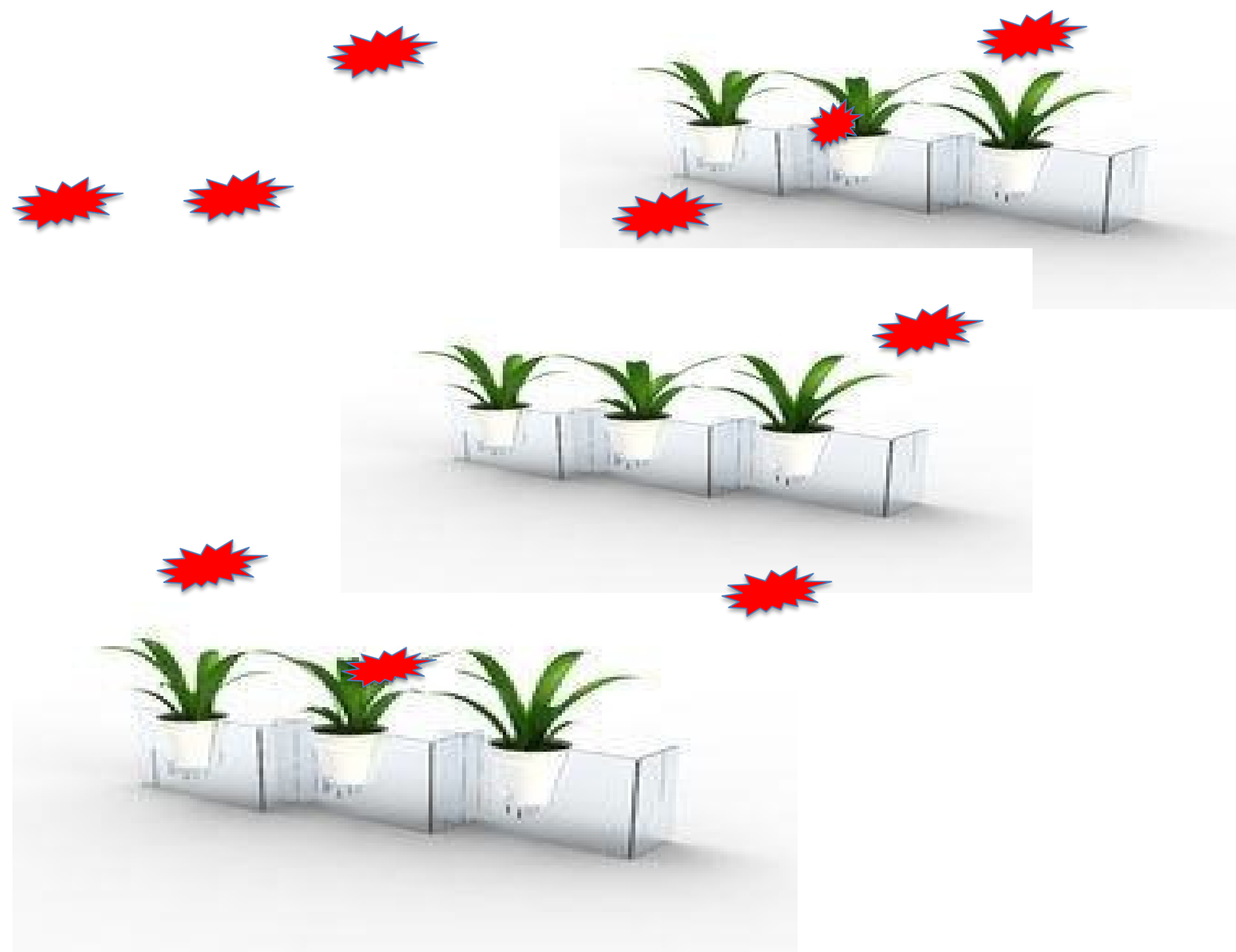
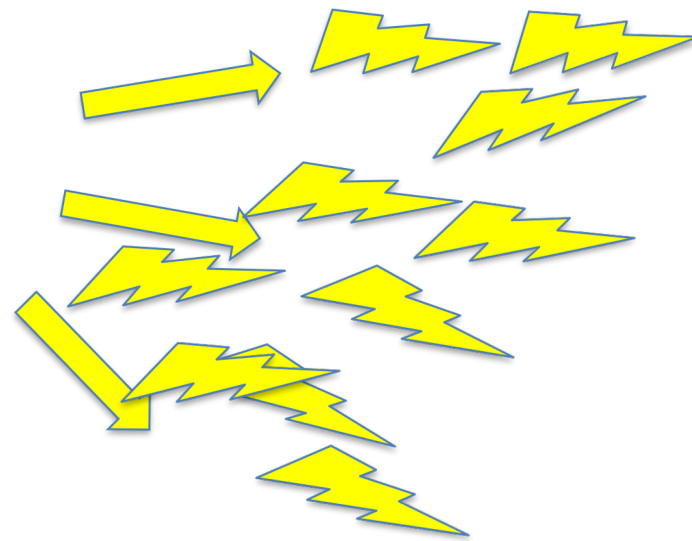


Tested by Third Party Lab





## ProGuard Sanitization Uses An “ACTIVE” Process



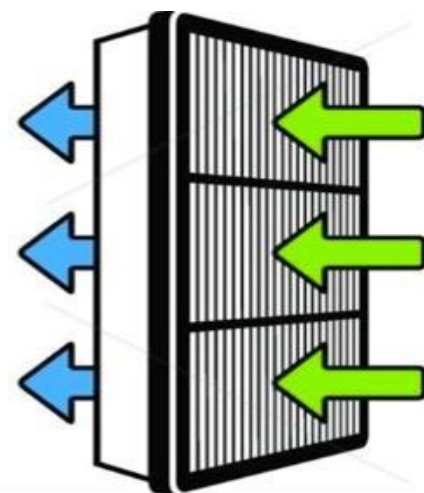
Our technology  
**seeks out and attacks** the  
pathogens at the source,  
**protecting the entire room**

to reduce outbreaks.

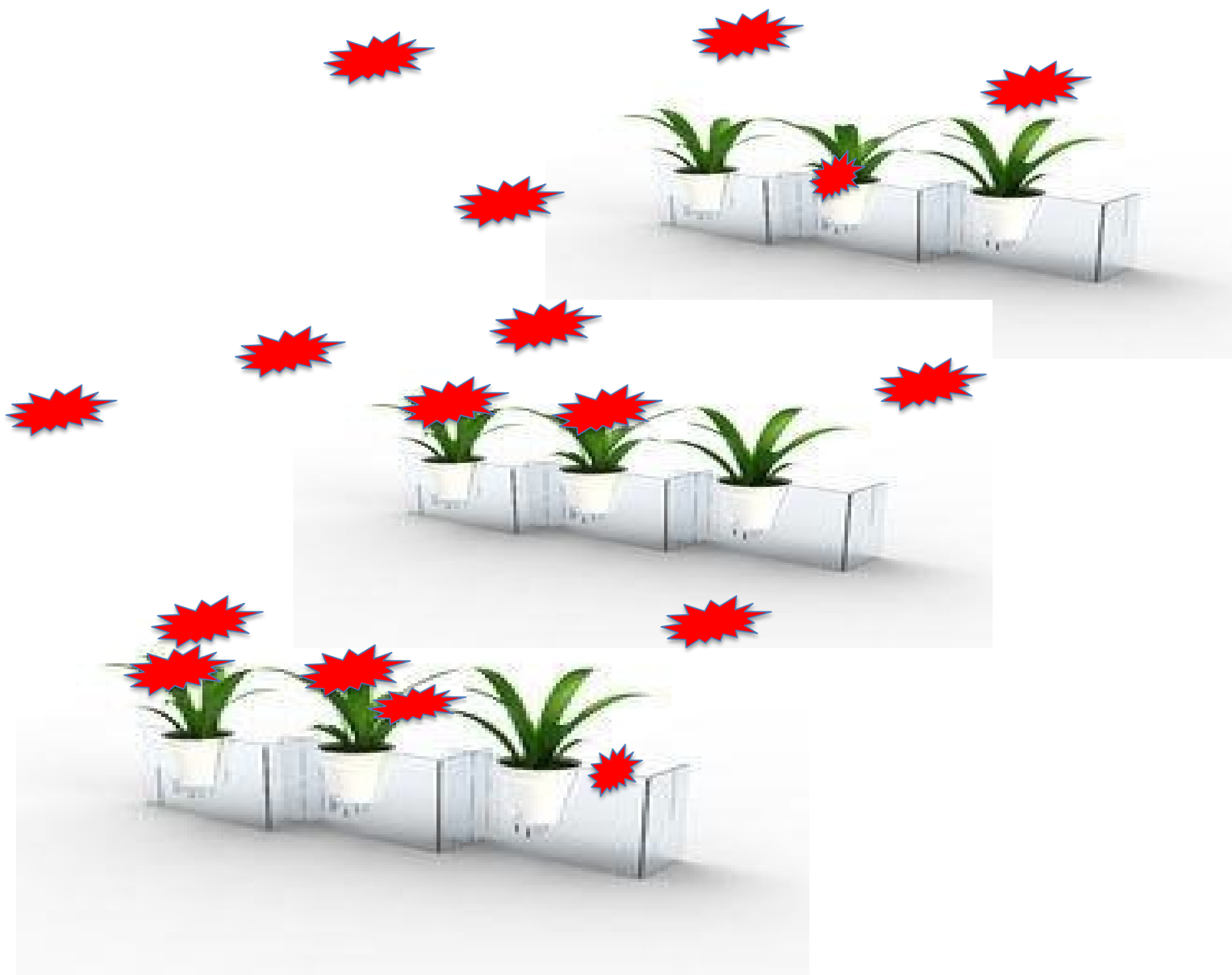
**Sending powerful purification directly to the plants, pots, benches etc. to control pathogens.**



“PASSIVE” technologies require the molds, bacteria to be delivered to the purifier

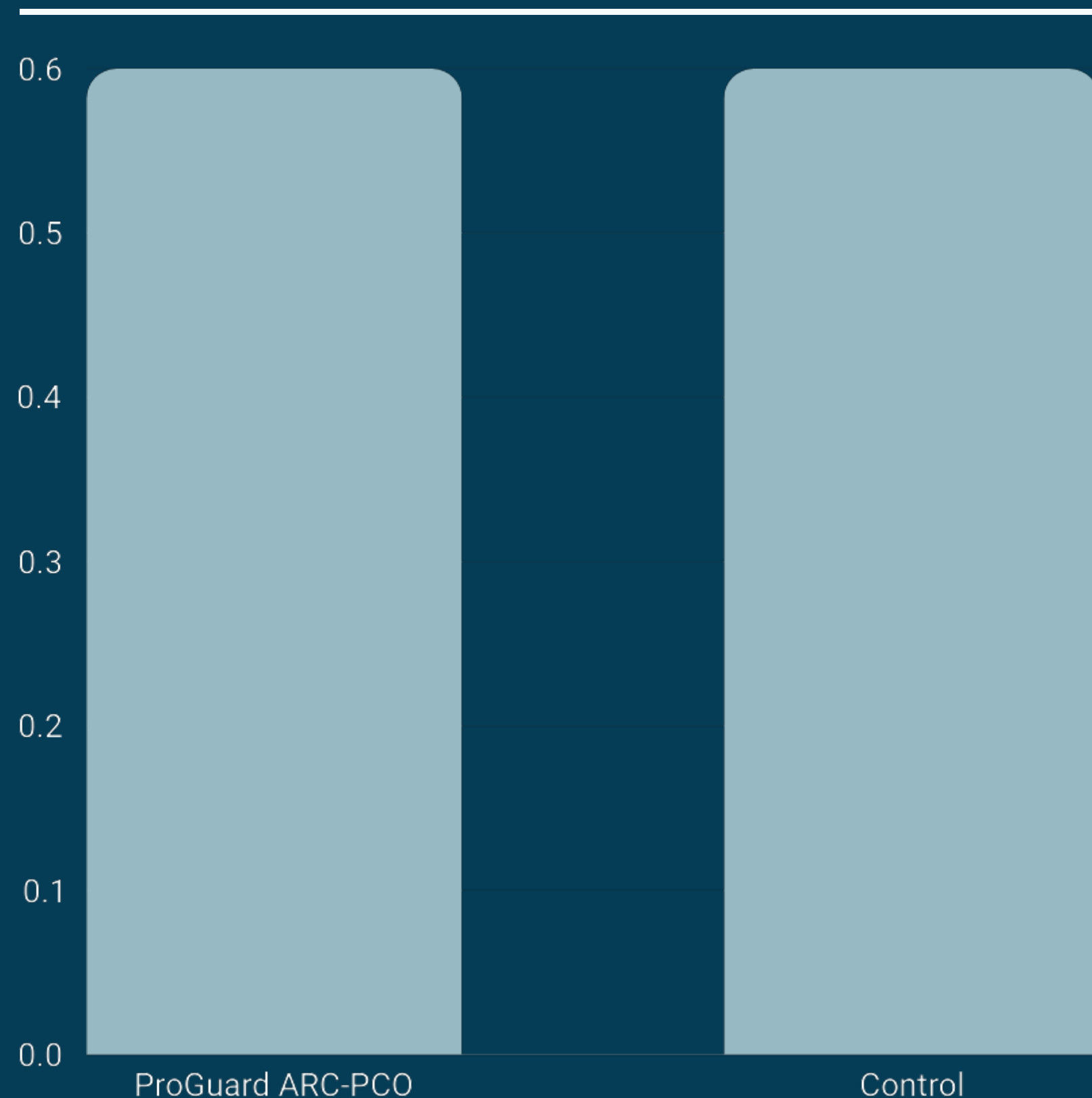


Passive technologies are only effective in small areas close to the machine **leaving the majority of the room vulnerable and unprotected.**





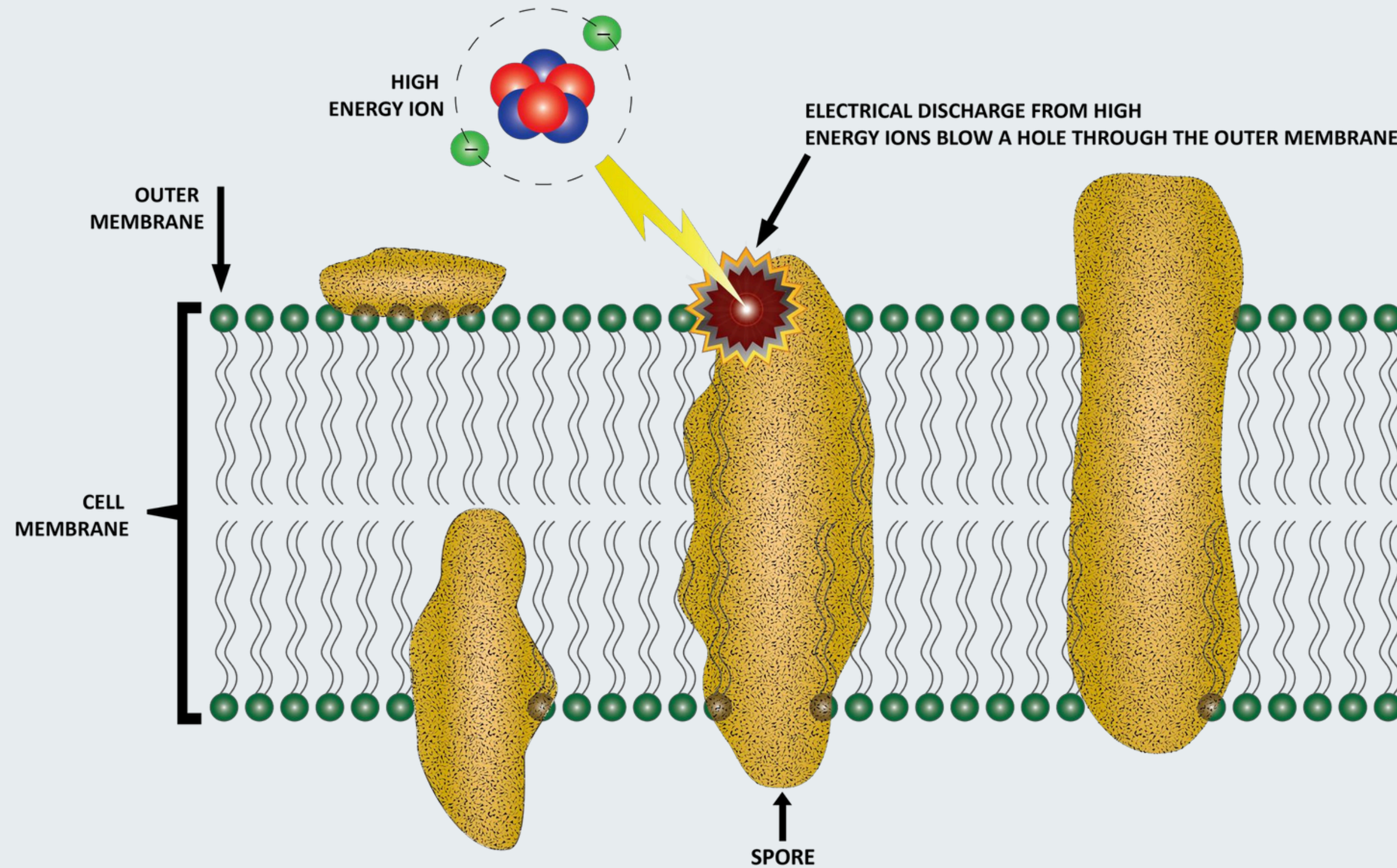
# Terpenoid Biossay Test



When comparing the two datasets, it was determined that **no statistically significant variance** was found in **terpenoid levels** between the product treated with ProGuard and untreated product.

\*Testing completed by: An Innovative Solutions Customer

# How The ProGuard BPI Ionization Works

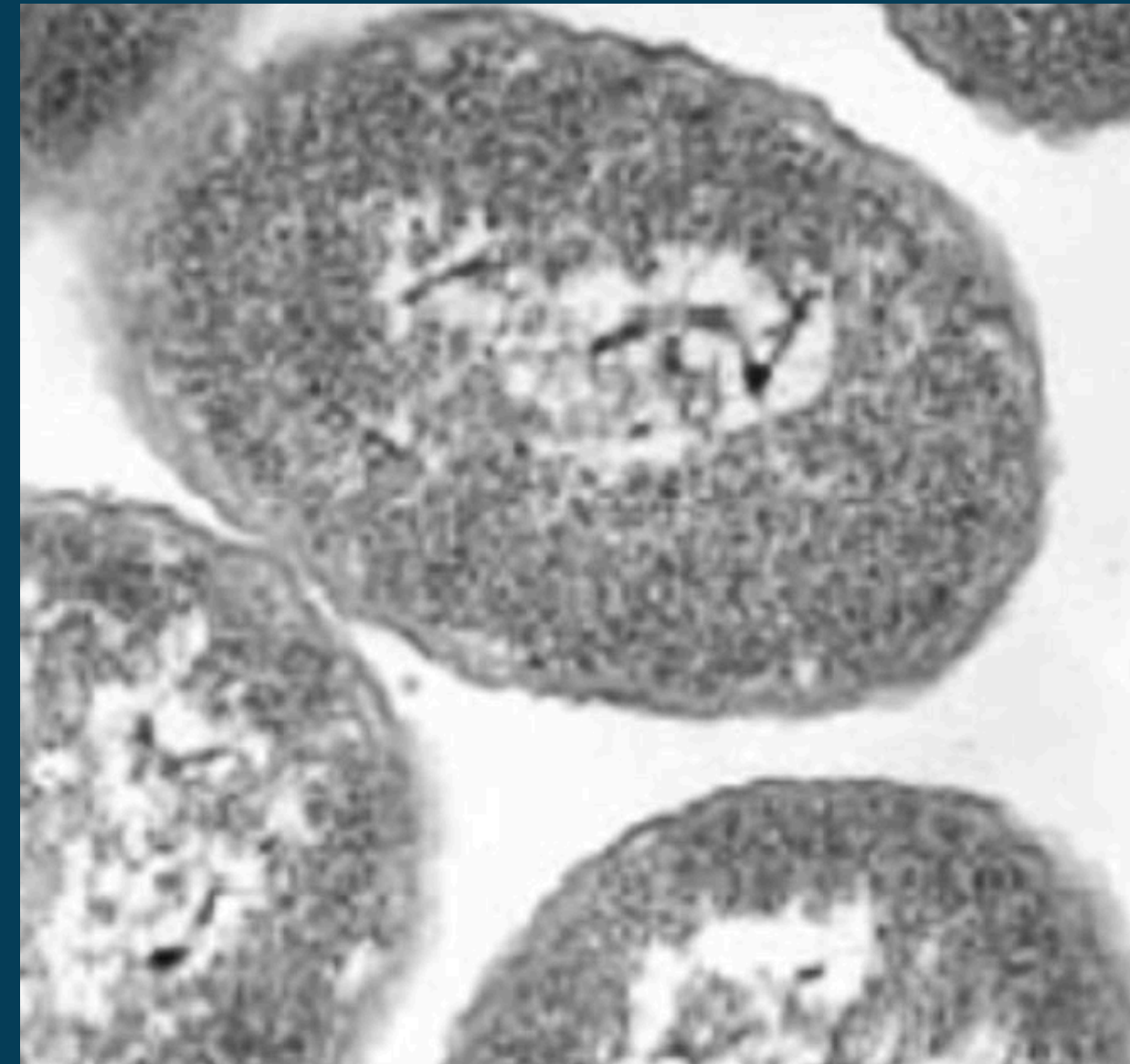




# Enterococcus Bacteria Cells

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Enterococcus Bacteria Cells **AFTER** exposure to ProGuard High Energy Ionization



\*TEM photo of bacteria cells **AFTER** exposure to ionization process

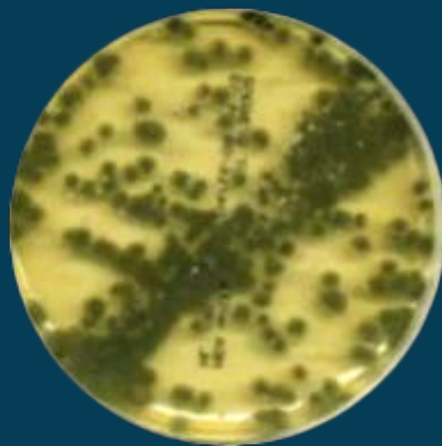
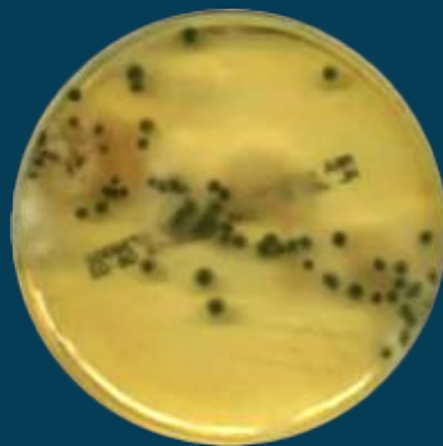
# Effectively Kills Pathogens Of All Types

- **Problem:** Customer Was Failing 12% Of Their Microbial Tests
- **Solution:** Installing ProGuard Customer Passed 100% Of Their Microbial Tests

## FIELD STUDY: Denver, CO 25,000ft

Microbial Lab Test- WITHOUT ProGuard			
Analytes	Unit	Microbial CFU's	Pass/ Fail
Yeast/ Molds 1	c fu/g	29, 000	FAIL
Yeast/ Molds 2	c fu/g	20, 000	FAIL
Yeast/ Molds 3	c fu/g	65, 000	FAIL

Microbial Lab Test- WITH ProGuard			
Analytes	Unit	Microbial CFU's	Pass/ Fail
Yeast/ Molds 1	cf u/ g	200	PASS
Yeast/ Molds 2	cf u/ g	1, 000	PASS
Yeast/ Molds 3	cf u/ g	1, 300	PASS





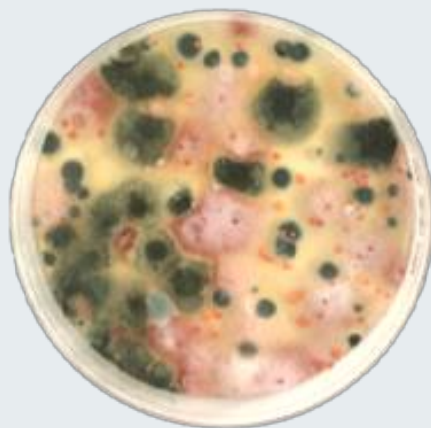
# Prevents Mold & Powdery Mildew

- **Problem:** Customer Was **Failing 10%** Of Their Microbial Tests
- **Solution:** Installing **ProGuard** Customer **Passed 100%** Of Their Microbial Tests

## FIELD STUDY: California 30,000 ft

Microbial Lab Test- WITHOUT ProGuard			
Analytes	Unit	Microbial CFU's	Pass/ Fail
Yeast/ Molds 1	c fu/g	11, 000	FAIL
Yeast/ Molds 2	c fu/g	41, 000	FAIL
Yeast/ Molds 3	c fu/g	23, 000	FAIL

Microbial Lab Test- WITH ProGuard			
Analytes	Unit	Microbial CFU's	Pass/ Fail
Yeast/ Molds 1	cf u/ g	160	PASS
Yeast/ Molds 2	cf u/ g	670	PASS
Yeast/ Molds 3	cf u/ g	280	PASS



# ProGuard Reduces Powdery Mildew

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## HORTICULTURISTS UNDERSTAND THAT POWDERY MILDEW (PM) IS SYSTEMIC

- Once a plant is infected with PM it is almost impossible to get rid of it
- PM then begins sporulation to grow and spread to other plants

## VARIABLES THAT CAUSE PM

- Plant Factors: Strains, systemic clones
  - Environmental Factors: Air quality, circulation, temperature, humidity
  - Other Factors: Water, soil, growing practices
- 

**Air quality is a critical factor in minimizing Powdery Mildew, and the ProGuard System provides air and surface purification to help reduce its infestation and spread in indoor and greenhouse grows.**

**ProGuard is not a "Silver Bullet." Growers must also address their overall growing practices and implement effective QA SOPs to fully manage Powdery Mildew and other pathogens.**



# Food Test Using ProGuard Room Temperature

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**Non Treated**



**ProGuard Treated**



## DAY 1

Two containers of **non-treated** strawberries in separate, non-refrigerated rooms. One room **protected** with **ProGuard**, the other room was not.



## DAY 8

On day 8 the non-treated strawberries, **without ProGuard**, protection **developed botrytis**. The **ProGuard protected** strawberries contained **no mold**, and only **showed some dehydration**





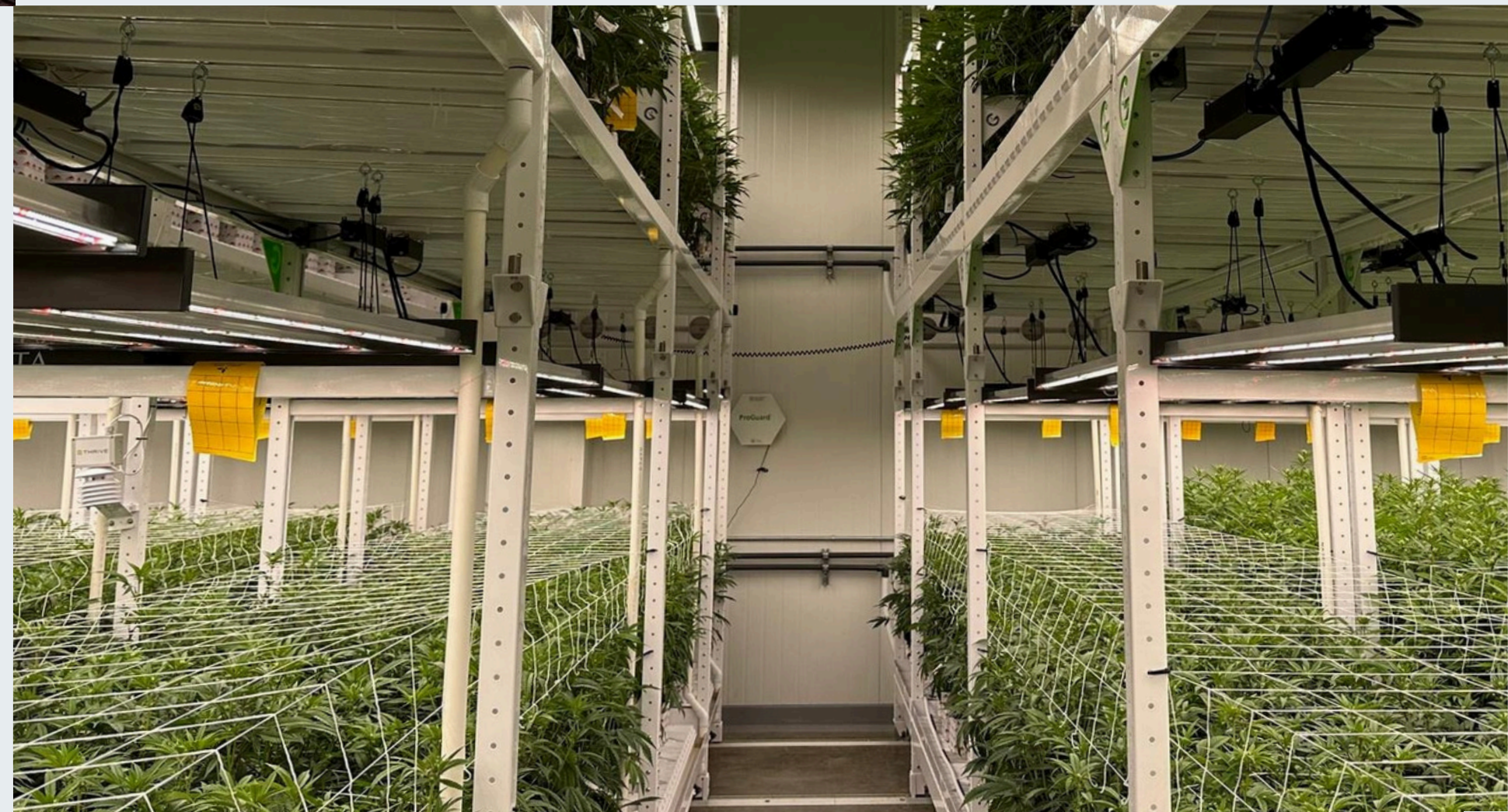
## FACILITY

Insures an **umbrella of coverage** over the **entire facility**:

- Sanitization HVAC Supply Air
- Sanitize Critical Rooms
- Odor Control Exhaust

## GROW ROOMS

Provide **clean air** in the **Grow Rooms** to insure clean Bud development







## PROCESSING

Provide a **clean environment** for trim, processing & packaging.

## DRY ROOM

**Manages:** gray mold, botrytis, and bud rot in the dry and cure process.





# ProGuard Protection For Your Entire Facility

**ProGuard insures an umbrella of protection around the entire facility to help manage gray mold, botrytis, and bud rot in all stages of cultivation**



## GROW ROOMS

- Clone
- Nursery
- Veg
- Flower

## POST HARVEST

- Dry
- Cure
- Trim
- Packaging
- Storage
- Corridors
- Extraction Labs



# ROI Using ProGuard Protection

1,000 SF ROOM REQUIRES 2 - DXB 100 UNITS @ \$1,150 EA. = TOTAL COST \$2,300 USD



1. 1-GrowCycle = 1000 sf room 800 sf canopy - 75 lbs.  
dried flower = **\$150,000 yield per grow cycle**
2. Rooms WITHOUT ProGuard on average produced 5%-10% LESS yield with additional costs
  - Due to costs associated with product loss
  - Reduced yields and quality from PM
  - Costs for increased labor and inputs for spraying, increased pruning and attention

# ROI Using ProGuard Protection

<b>GROW CYCLE PRODUCT YIELD</b>	<b>\$15 0,000</b>
<b>10% Loss</b>	<b>-\$15,000</b>
<b>5% Loss</b>	<b>-\$7,500</b>
<b>2% Loss</b>	<b>-\$3,000</b>

- A conservative 2% increase in yield per cycle means a \$2,300 ProGuard investment pays for itself in the first grow cycle
- An estimated 2-year ROI of over \$30,000 per unit

# ProGuard Is University Tested by Dr. James Marsden

(Kansas State University)

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## Tested at Leading Universities

### Dr. James Marsden

- Kansas State University distinguished professor of Food Safety & Security
- Research focus has been on the safety of food products
- Senior Science Advisor for the North American Meat Processor Association
- Advisor to the United States department of agriculture
- Author of over 100 publications and book chapters on food safety
- Advisor to American Meat Packers Association
- Past president of the American Meat institute foundation on the board of several corporations



# DXB 100



**Application:** Designed for high humidity high density areas including veg rooms, flower rooms, mother rooms, dry rooms, and greenhouses

- The **DXB 100** has been designed and engineered to **deliver sanitization** for high humidity high density environments using the ProGuard Sanitization Technology
- The **DXB 100** is easy to install and maintain as it **operates 24/7**
- ProGuard Sanitization** has been **tested and validated** by reputable labs across the world to ensure safety and effectiveness in reducing mold, mildew, bacteria, viruses, voc's and other dangerous pathogens

## Specifications

- Covers up to 500 sf / 46 m2
- Weight of unit 6.5 lbs
- Dimensions (HxLxD): 11.69" x 13.44" x 3.5
- Electrical input: 100-240V - 50/60Hz
- Electrical output: 12VDC 3A
- Power Consumption: Running 14W-21W
- Warranty: 2 years

# DXB Mini



**Application :** Indoor grow rooms, greenhouses, dry rooms, and more

- **The DXB Mini** has been designed and engineered to **deliver sanitization** that is proven to reduce and eradicate surface and airborne pathogens for **high load environments** in Cannabis Cultivation Centers using the ProGuard Sanitation Technology
- **The DXB Mini** is easy to install and maintain as it **operates 24/7** in Cannabis facilities
- **ProGuard Sanitization** has been **tested and validated** by reputable labs across the world to ensure safety and effectiveness in reducing mold, mildew, bacteria, viruses, voc's and other dangerous pathogens

## Specifications

- Covers up to 250 sf / 23 m<sup>2</sup>
- Weight of unit 3.3 lbs
- Dimensions (HxLxD): 11.92" x 9.72" x 3.64
- Supply/ Voltage/ Watts: 100-240VAC/ 17W
- Operating Voltage/ Amps: 24VDC/ .67A
- Warranty: 2 years

# pureAir HVAC



**Application:** HVAC supply air, **offices, labs, and more**

- **pureAir HVAC** has been designed and engineered to **deliver sanitization** that is proven to reduce and eradicate surface and airborne pathogens in HVAC systems in **Cannabis Cultivation Centers** using Bipolar Ionization Technology (BPI)

- **pureAir HVAC** is easily installed in HVAC systems. BPI technology has been **tested and validated** by reputable labs across the world to ensure safety and effectiveness in reducing odors caused by mold, mildew, bacteria, VOC's and other pathogens

## Specifications

### 9" Cell

- 500 sf / 46 m<sup>2</sup>
- 3-3.5 tons
- 100-240 VAC/ 18W
- 24 VDC/ 0.70A
- 9.75" x 9.75" x 13"
- 2.8 lb

### 14" Cell

- 750 sf / 69 m<sup>2</sup>
- 5+ tons
- 100-240 VAC/ 28W
- 24 VDC/ 1.05A
- 9.75" x 9.75" x 18.75"
- 3 lb



# Guardian with BPI



**Application :** Sanitize **grow rooms after harvest** to prepare the rooms for new crops and more.

- The **Guardian** has been designed and engineered to **deliver sanitization** that is proven to reduce and eradicate surface and airborne pathogens for **high load environments** in Cannabis Cultivation Centers using the ProGuard Sanitization Technology
- The **Guardian** is easy to use as a **mobile unit** in Cannabis facilities
- **ProGuard Sanitization** has been **tested and validated** by reputable labs across the world to ensure safety and effectiveness in reducing mold, mildew, bacteria, viruses, voc's and other dangerous pathogens

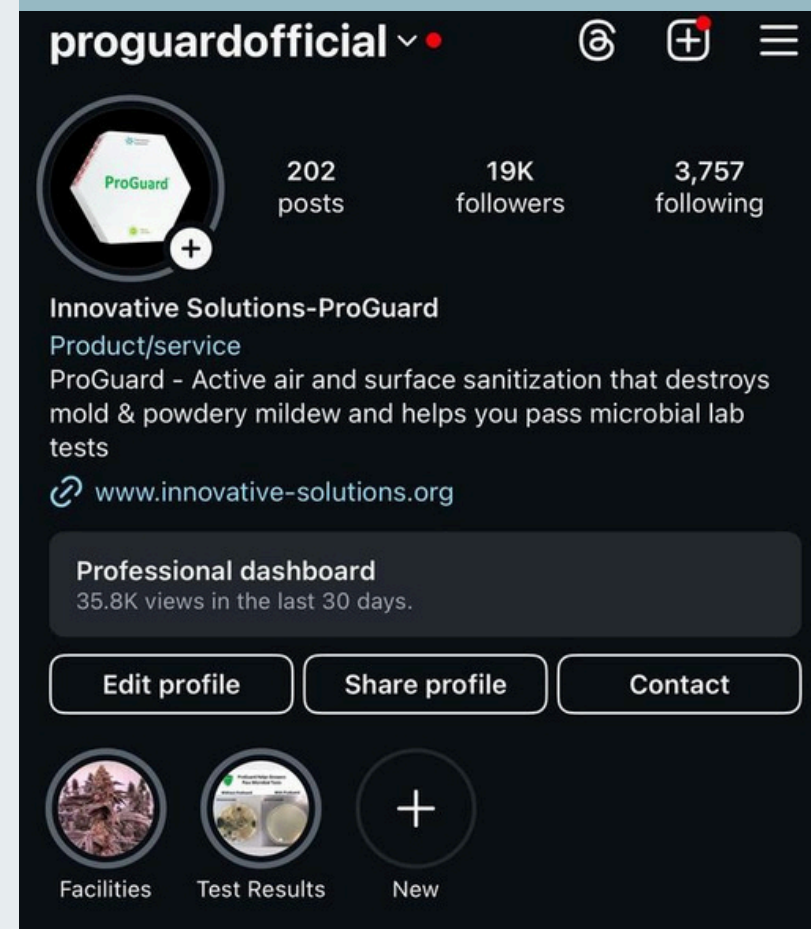
## Specifications

- Covers up to 2500 sf / 225 m2
- Weight of unit 39 lbs
- Dimensions (HxLxD): 20.5" x 18.5" x 23.5
- Electrical input: 120V/ 60 Hz or 220V/ 50Hz
- Airflow: 409 CFM
- Usage: Min. 143W/ 1.43A - Max. 274W/ 2.78A
- Aluminum cast
- Four 14" PCO cells
- Two 12" x 12" filters
- Four locking castor wheels
- Two carry handles
- Warranty: 2 years

# ProGuard Is The World Leader

- **Global Brand recognition** with 19,000+ followers on **Instagram @proguardofficial**
- **ProGuard** articles featured on **MMJDaily** which is viewed by tens of thousands of customers
- Featured on **CannaCrips videos** which is viewed by millions around the world

## INSTAGRAM PAGE



## MMJDAILY ARTICLE



## CANNACRIBS

