

**green b**

**Veggie Washer**

*Community Servings* asked:

**“How do we clean and prepare the produce in an efficient and quick way to avoid rotting and waste?”**





# Available Products

---

Conveyor Belt

Hand-pump



**Wrong Scale!**

# Available Products

---



**Washing Machine**



**Ozone Spray**



**Expensive!**

# Proposed Solution

---



- Pressurized Water Spray
- Compressed Air and Vibration
- UV Lights

# UV Benchmarking

---



**Water  
Treatment**

**Air  
Purification**

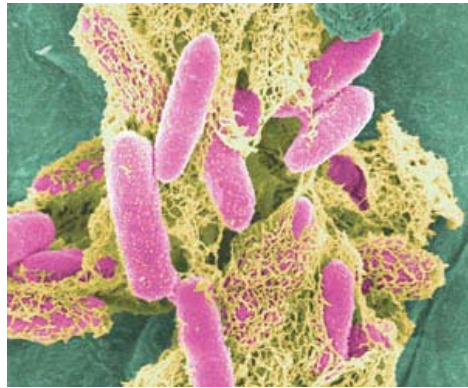
**Surface  
Disinfection**

**Food  
Preparation**

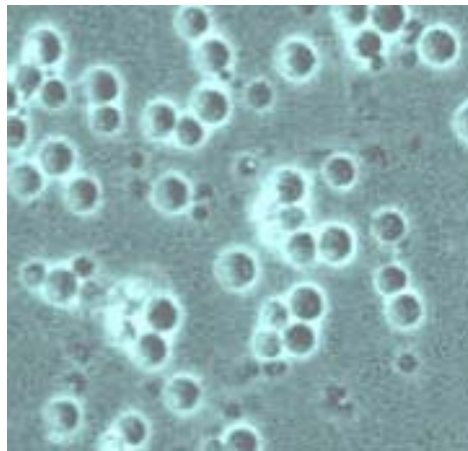
**EX-  
S-  
T-  
I-  
N-  
G**

# UV Technical Data

---



**E. coli:**  
**7,000 mW\*s/cm<sup>2</sup>**



**Baker's yeast:**  
**8,800 mW\*s/cm<sup>2</sup>**



# The Rules

---



“Rinse fresh fruits and vegetables under running tap water...”

-Partnership for Food Safety Education

“Wash fruits and vegetables under running water just before eating, cutting, or cooking.”

-FDA, *Safe Handling of Raw Produce at Home*

“Most researchers advise not to use soap, liquid detergent, or a chlorine bleach solution to wash produce because none has been approved for human consumption and all could be absorbed into the fruit or vegetable, especially if it has a nick or blemish.”

-Pittsburgh PostGazette, *Soak, scrub or spray?*



# Experimentation



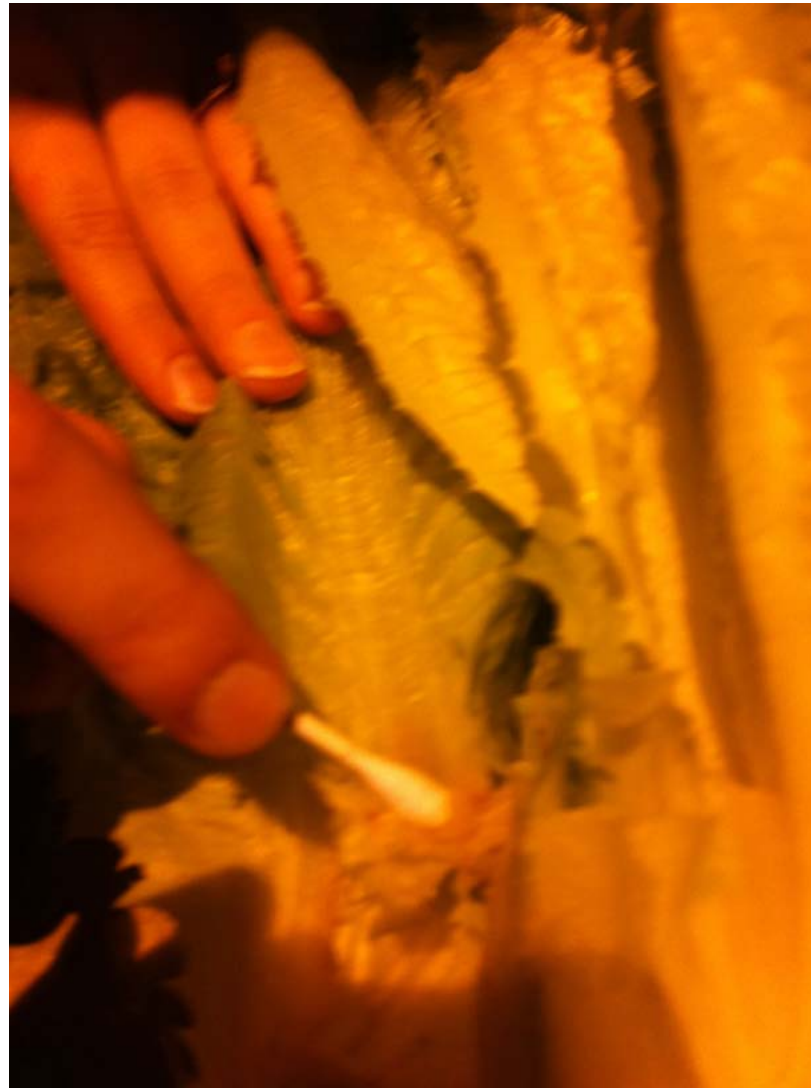
# Experimentation

---



# Experimentation

---



# Results



More Dirt ----- Less Dirt

Spray Pattern:

**Soaker**

Valve:

**Fully Open**

Time:

**10.2 seconds**





# Results



More Dirt ----- Less Dirt

Spray Pattern:

**Mist**

Valve:

**Fully Open**

Time:

**10.5 seconds**

**20.2 seconds**



# Results



More Dirt ----- Less Dirt

Spray Pattern:

**Shower**

Valve:

**Half Open**

Time:

**10 seconds**



# Conclusions

---



- Less Water
- Spray Pattern
- UV for E. Coli



# Any Questions?

