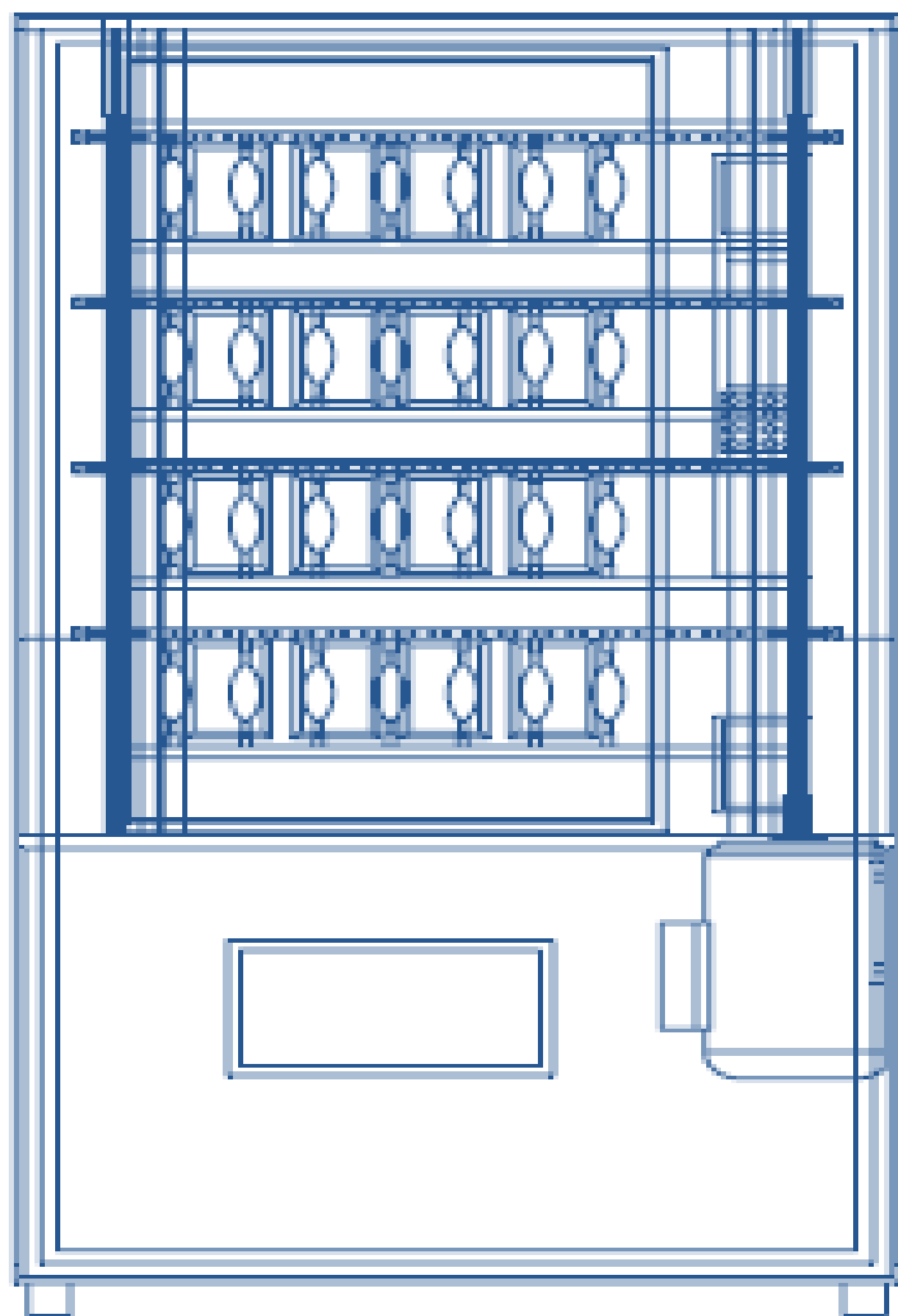


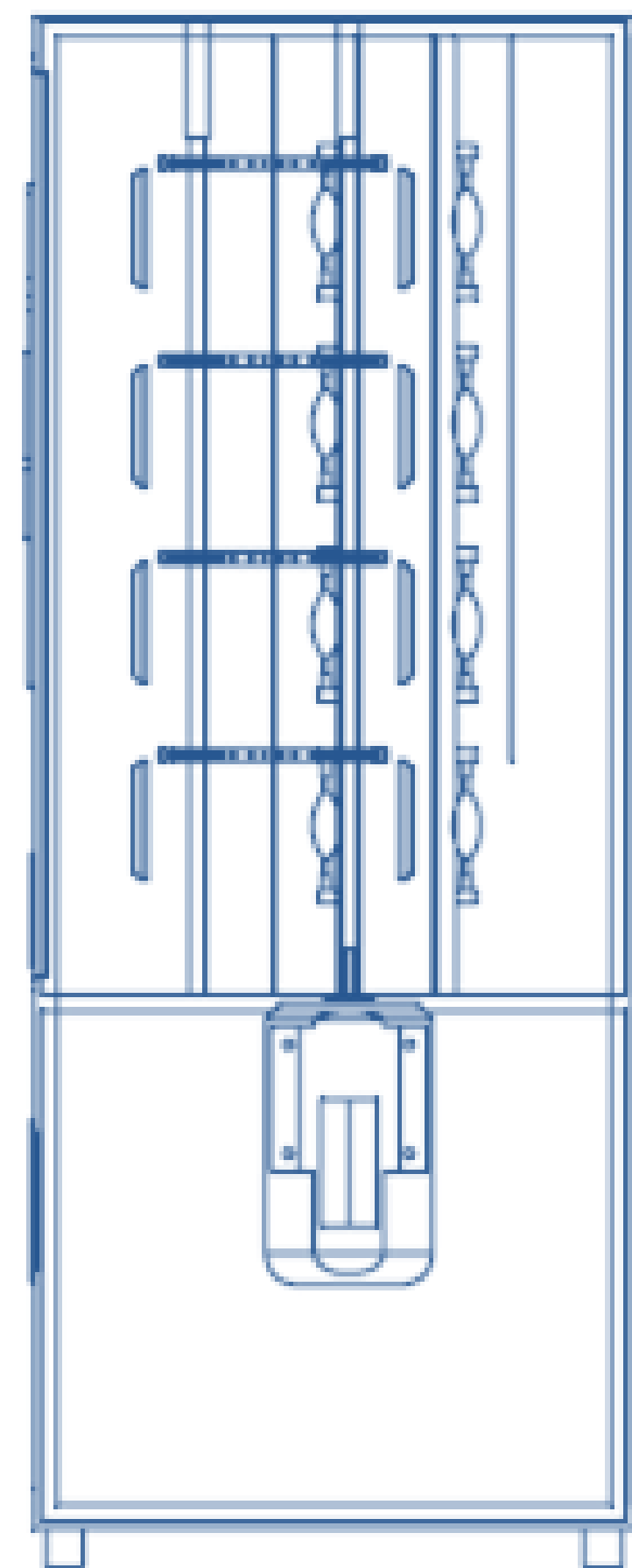


Vending Machine for Dispensing Decontaminated Food Products

PATENT NO. PI 2022007007



Front View



Side View

TECHNOLOGY

Vending equipment with active decontamination function to preserve perishable food products.

CURRENT ISSUES

- Most vending machines are passive and do not have the capacity to inactivate food products that are placed in the unit. Some product remain in the vending machines longer than the others. This means that the product has a longer residence time from point of placement to point of purchase.
- Existing vending machines are rarely equipped with decontamination elements. Those which do have it, decontaminates only once for each product sold, *i.e.*, before dispensing. There is no decontamination between point of placement and point of dispense. A longer residence time in the vending machine relates to reduced quality and safety of the food product over time.
- Perishable items are lost when the residence time is long.

INVENTIVENESS AND NOVELTY

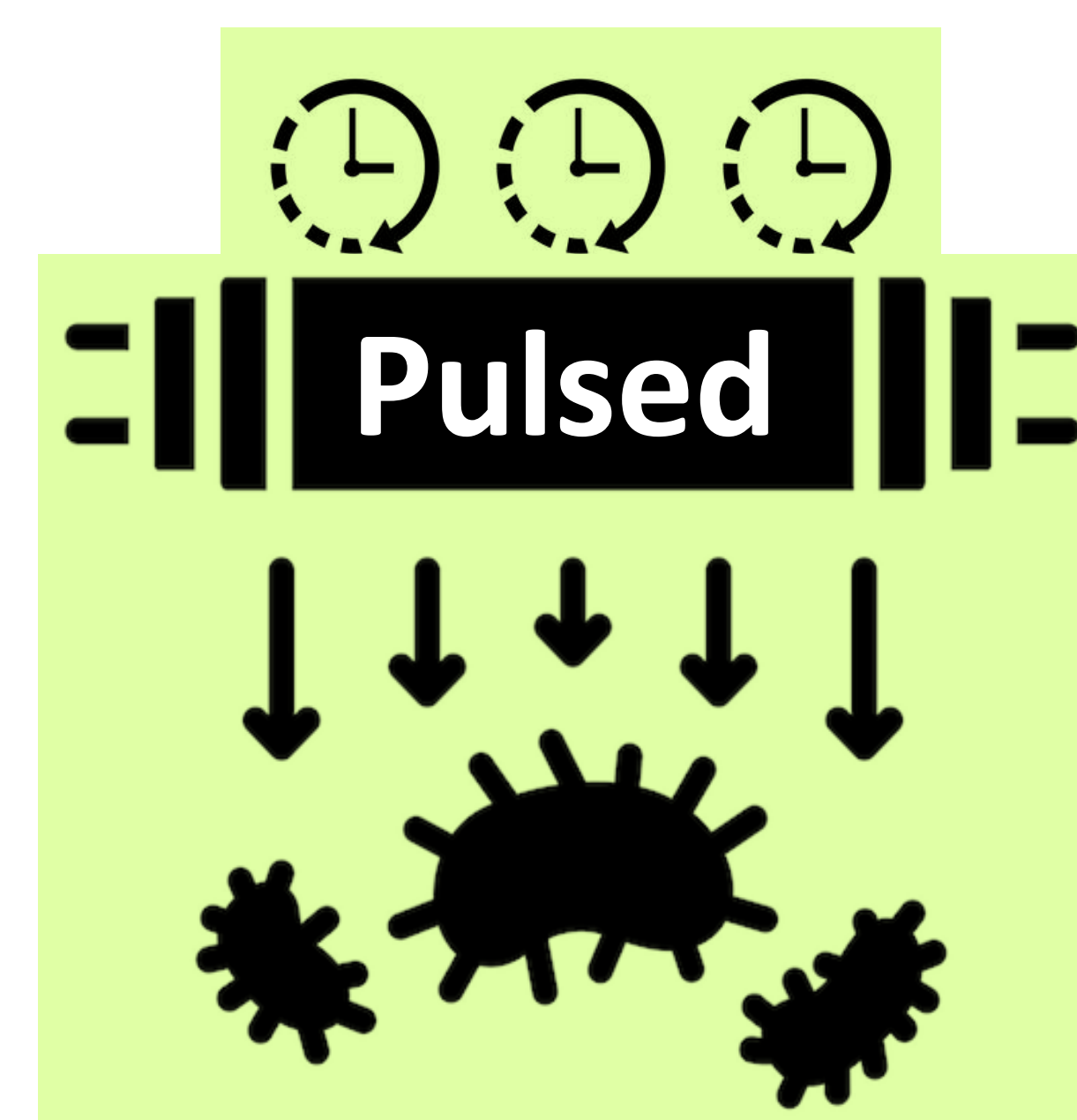
Periodic decontamination while in retail extends product shelf life. This invention allows not only shelf stable food to be retailed through the vending system, but perishable food can also be retailed the same way.

ISSUES

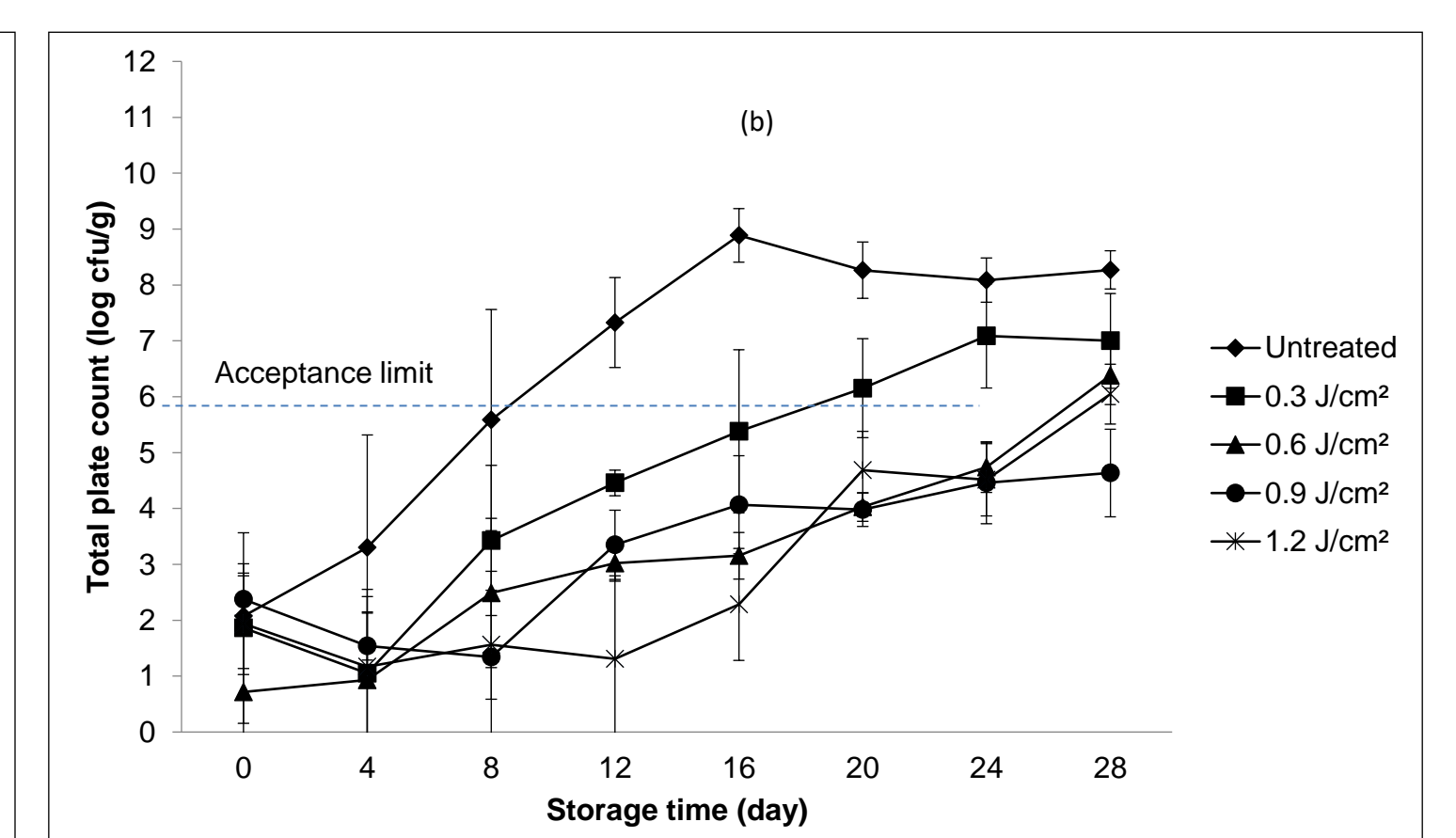
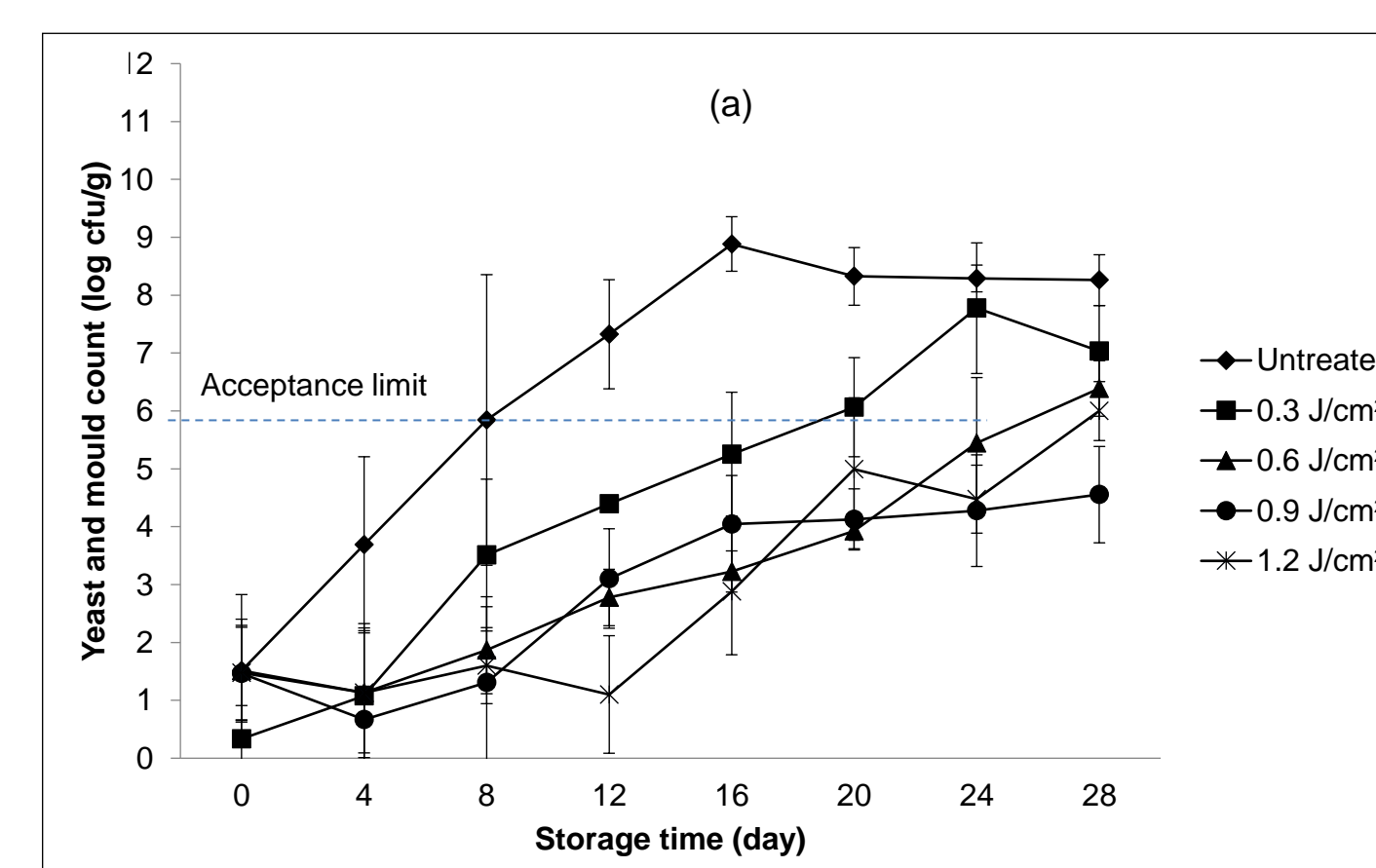


Perishable items in the vending machine spoil quickly when the residence time is long

SOLUTION



Extend product life: Active periodic decontamination of food products by the vending machine from point of placement to point of dispense.



Repetitive pulsed light exposure of cut cantaloupes at 48 hour interval on (a) total plate and (b) yeast and mould counts

USEFULNESS AND APPLICATION

Active periodic decontamination of food products by the vending machine from point of placement to point of dispense. The shelf life of perishable food products could be extended and the losses reduced.

IMPACT OF THE PRODUCT

- This approach is a milder and greener way to decontaminate as no thermal energy is used.
- Pulsed light is gentle to the food products but germicidal to the microorganisms, allowing safe and quality products.
- The active decontamination function reduce losses as it helps extend the product shelf life.

MARKET POTENTIAL

- General public
 - Provides easy access (availability) to safe and quality food
 - Offers convenience to consumers especially for cut-fruits and minimally processed vegetables
- Industry
 - With longer shelf life, the invention reduce food waste and business loss to the vendors

TRL : 4 - Validation in laboratory environment



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