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UV Light Innovation Extends Shelf Life of Refrigerated Foods

PureFize and NTU Singapore Collaborate on EcoLoc Device to Combat Household Food Waste

Swedish tech firm PureFize Technologies, in collaboration with scientists from Singapore's Nanyang Technological University (NTU), has unveiled EcoLoc, an innovative UV light device designed to significantly extend the shelf life of refrigerated foods. This compact and user-friendly system is aimed at tackling the global issue of household food waste while enhancing food hygiene.

The EcoLoc comprises a battery-powered ultraviolet (UV) light module paired with a transparent glass lid, purpose-built to fit Ikea's widely used 365+ food storage containers. The heart of the technology is a chip that utilises cathodoluminescence, a process in which accelerated electrons stimulate a material to emit germicidal UVC light. The device does not contain mercury, a staple in traditional UVC lamps, making it a safer and more environmentally responsible alternative.

The system is engineered for intermittent use, activating briefly when food is first placed into storage and optionally reactivating once daily. Each charge powers approximately 20 lighting cycles, offering a convenient balance of effectiveness and energy efficiency. In laboratory tests, EcoLoc successfully eliminated common foodborne bacteria such as *Pseudomonas aeruginosa*, *Escherichia coli*, and *Legionella pneumophila* from food surfaces.

The real-world benefits of EcoLoc are impressive:

- Tomatoes retained freshness for seven additional days.
- Buns were preserved for 22 extra days.

- Blueberries remained edible for up to 28 days longer.

This development showcases how cutting-edge light technologies can be seamlessly integrated into everyday consumer tools, empowering users to reduce waste without altering existing refrigeration systems.

Key Benefits of the EcoLoc System:

- Non-toxic Technology: UVC light generation without mercury.
- Extended Shelf Life: Demonstrated preservation of a range of perishable foods.
- Food Hygiene Improvement: Effectively eliminates surface bacteria.
- User-Friendly Design: Compatible with existing Ikea food containers and rechargeable for repeated use.

The launch of EcoLoc reinforces the potential of UV technology as a key solution in the fight against food waste. PureFize and NTU are helping consumers preserve food quality and reduce environmental impact one container at a time.

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