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Translated from French

Refrigerator gadget uses UV rays to keep food fresh

The EcoLoc works with Ikea's existing 365+ range of food containers

Ultraviolet light is known for its ability to kill germs, including those that spoil food. And while our refrigerators typically lack UV light for food preservation, a new consumer appliance is here to change that.

Called EcoLoc, this gadget actually consists of two parts: a small, battery-powered UV lamp module and a clear glass lid with a holder for the module. This lid is compatible with more than 365% of Ikea's existing range of storage containers.

At the heart of the module is a special chip designed by scientists from Nanyang Technological University in Singapore and the Swedish company PureFize Technologies. This chip produces shortwave UV light—also known as UVC, the most effective at killing germs—without using toxic mercury, which is typically used in conventional UVC lamps.

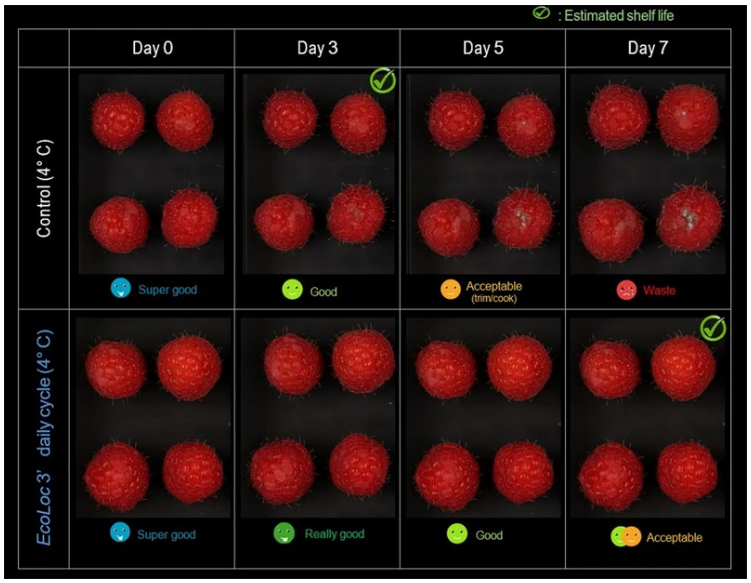
Instead, the chip takes advantage of a process known as cathodoluminescence.

In simple terms, this involves passing electrons from a zinc oxide cathode through an electric field that accelerates them to a cathode. This cathode is coated with a material that emits primarily UVC rays—as well as UVA and UVB rays—when excited by the electrons.

One charge of the EcoLoc lamp module battery should be sufficient for 20 lighting cycles

And no, the EcoLoc isn't designed to run continuously. The principle is simple: it turns on for a few minutes when food is placed in the container; a built-in timer automatically turns it off. Users can then choose to reactivate it for a few minutes each day.

In laboratory tests, the device proved highly effective in eradicating harmful bacteria *Pseudomonas aeruginosa*, *Escherichia coli*, and *Legionella pneumophila* from food surfaces. It also extended the refrigerated shelf life of tomatoes by seven days, bread rolls by 22 days, and blueberries by up to 28 days.



After outlasting a control group (top), raspberries stored at 4°C and disinfected using EcoLoc for three minutes a day remained in "acceptable condition" after seven days.

A paper on the research, led by Professor Hilmi Volkan Demir of Nanyang, was recently published in the journal *Advanced Optical Materials*.

A starter kit including a lamp module and three covers is available now on the EcoLoc website, at a price of €79.

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