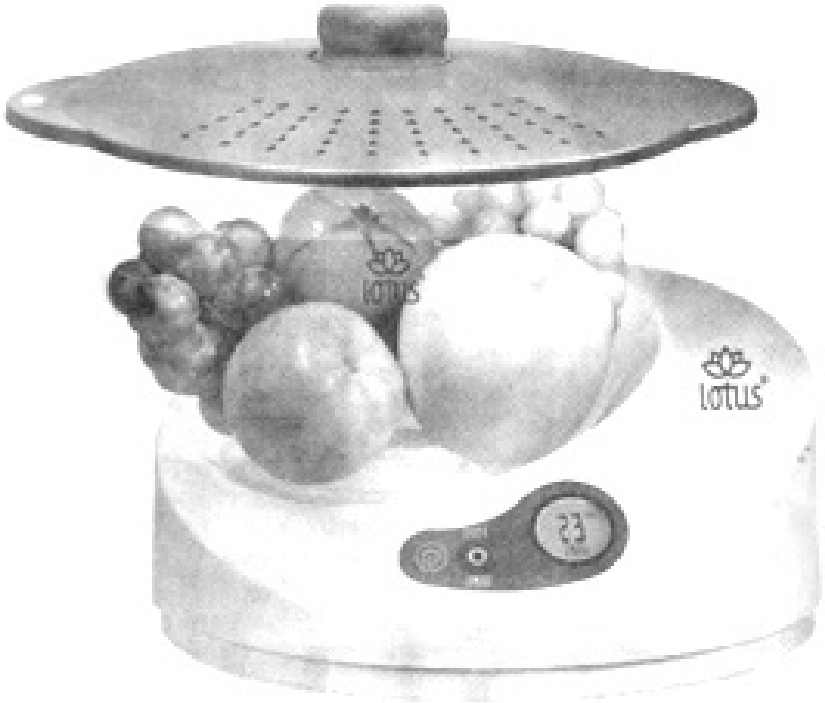
Inspector Gadget SUSAN SAMPSON

The magic of modern science



It was Arthur C. Clarke who pointed out that "Any sufficiently advanced technology is indistinguishable from magic." Clarke's mind was not on kitchen appliances. But mine was on Clarke when I encountered the Lotus Sanitizing System. In a dirty world where even spinach is suspect, this new appliance can turn tap water into a germ killer. Or can it?

Here's the science behind it: The unit includes a spray bottle and a bowl to fill with, say, fruit. Add water. A cartridge zaps the water with a wee electrical discharge. This infuses it with ozone, or O3. (Yes, the water smells like the air after a thunderstorm.) This "super-oxygenated" water is touted to destroy 99.9 per cent of germs and pesticide residues. You have a 15-minute window before the O3 reverts to harmless O2. The timer goes off. Poof, magic! Or poof, science! All for the list price of $249.99 at Canadian Tire.

But you've got to believe. That's where George Szatmari comes in. A microbiologist at Université de Montreal, Szatmari has written articles about germs in science journals around the world. So Canadian Tire hired him as a consultant.

"Basically, what we know is that it works," he says, trying to explain the power of ozone. "We're not sure how it works."

Two theories: It breaks apart cells walls and the bacteria explode. Or the ozone generates toxic free radicals that attack bacteria protein and DNA.

As for the leftover 0.1 per cent that aren't slaughtered, Szatmari says reducing the level of contamination can prevent illness. "In the case of any food-borne illness, it's always the dose that's important."

The trouble is, the treated water looks like plain H2O. Using it is an act of faith. "People don't walk around with microbiology test kits," Szatmari admits, adding: "I know that it does work."

He spent the summer testing the Sanitizer at home, mainly on produce from farmers' markets, and in the lab, on "simulated bacterial spills" starring E. coli. He has a third attachment, a pitcher for drinking water. He says he put Koolaid in it and clear water came out. Ozone is used in some American water treatment plants, Szatmari says, but only as a preliminary way to kill germs before chlorination, mainly because it is corrosive.

In the kitchen, food safety folks are keen on water and bleach solutions. The Sanitizer is a less smelly, less harsh alternative. But can it live up to its tall claims, to clean fruit and veg, wipe cutting boards and countertops, turn tap water into better drinking water, remove stains and smells from cloth, carpeting and upholstery? Will it sanitize everything from a chicken leg to a baby's pacifier to a garbage can? Can it make festering dishcloths a thing of the past? And oh, there are two bonuses: food lasts longer when the bacteria and moulds that cause decay are killed, and the attachments sanitize themselves. Do you believe in magic/science? It's all in the glossy, consumer-friendly instruction booklet, with its charts and FAQs and lots of repetition to assist dolts and doubters like me.

I put grapes, peaches and tomatoes through a cycle. The grape skins seemed firmer and slightly more astringent afterward. But there were no discernible differences in the taste and texture of the other test subjects. I used the spray attachment on a kitchen towel that had been stained with merlot an hour ago, a stubborn old stain on the kitchen counter, a teacup coated with tannin, and mildewed caulking around a sink. The treated water worked a bit better than plain water, but not enough to praise.

I also drank some super-oxygenated water — before I knew better. It had a slight post-thunderstorm, swimming pool odour and a minerally flavour.

The verdict: The Sanitizer is an environmentally friendly alternative to chemical warfare against germs in the kitchen, but don't rely on it to attack stains. It might make an interesting Christmas gift for the obsessive-compulsive who has everything.

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