
Science Report

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NEW STUDY SHOWS WOOD CUTTING BOARDS, NOT PLASTIC, ARE SAFER FOR FOOD PREPARATION

Despite the prevailing wisdom, bacteria
die much more quickly on wood

George Gallepp
UW-Madison Ag Press Service

For decades now, cooks in homes and restaurants have been urged to use plastic rather than wood cutting boards in the name of food safety.

The fear is that disease-causing bacteria -- salmonella from raw chicken, for example -- will soak into a cutting board and later contaminate other foods cut on the same surface and served uncooked, such as salad ingredients. It's become an article of faith among "experts" that plastic cutting boards are safer than wood for food preparation because, as the thinking goes, plastic is less hospitable to bacteria.

It seems reasonable, but it just ain't so, according to two scientists at the University of Wisconsin-Madison's Food Research Institute.

Dean O. Cliver and Nese O. Ak, food microbiologists in the College of Agricultural and Life Sciences, have found that in some as yet unknown way wooden cutting boards kill bacteria that survive well on plastic boards.

"This flies in the face of the prevailing wisdom," says Cliver. "It isn't what I expected. Our original objectives were to learn about bacterial contamination of wood cutting boards and to find a way to decontaminate the wood so it would be almost as safe as plastic. That's not what happened."

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Wood Cutting Boards -- add one

Cliver is quick to point out that cooks should continue to be careful when they handle foods and wash off cutting surfaces after they cut meat or chicken that may be contaminated with bacteria.

"Wood may be preferable in that small lapses in sanitary practices are not as dangerous on wood as on plastic," he says. "This doesn't mean you can be sloppy about safety. It means you can use a wood cutting board if that is the kind you prefer. It certainly isn't less safe than plastic and appears to be more safe."

Cliver and Ak began by purposely contaminating wood and plastic boards with bacteria and then trying to recover those bacteria alive from the boards. They also tested boards made from seven different species of trees and four types of plastic. They incubated contaminated boards overnight at refrigerator and room temperatures and at high and typical humidity levels. They tested several bacteria -- Salmonella, Listeria and enterohemorrhagic Escherichia coli -- known to produce food poisoning.

The results consistently favored the wooden boards, often by a large margin over plastic boards, according to Cliver.

The scientists found that three minutes after contaminating a board that 99.9 percent of the bacteria on wooden boards had died, while none of the bacteria died on plastic. Bacterial numbers actually increased on plastic cutting boards held overnight at room temperature, but the scientists could not recover any bacteria from wooden boards treated the same way.

So where did we get the idea that wood isn't safe? Cliver and Ak don't know. They did a literature search and have not found any studies that evaluated the food safety attributes of wood and plastic cutting boards.

Although Ak, a graduate student at the Food Research Institute, will soon return to Turkey, Cliver hopes to continue the studies. A major question now, he says, is why wood is so inhospitable to bacteria. He and Ak have tried unsuccessfully to recover a compound in wood that inhibits bacteria.

The first year of the study was funded by the Food Research Institute with unrestricted food industry gift funds; other funding sources are now being sought. Cliver and Ak will soon submit an article based on the research to a refereed scientific journal.

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