

The Columbus Dispatch

Ohio's Greatest Online Newspaper

Dishwater doesn't have to be that hot, study finds

Thursday, March 01, 2007

Mike Lafferty
THE COLUMBUS DISPATCH

OSU researchers discovered two things when they recently tackled dishwashing science: Bacteria can be wiped away in temperatures that won't burn your hands, and forks are a bear to clean.

"It's the tines. One has to pay attention to remove the food items caught in the crevices," said Melvin Pascall, a food science and technology researcher at Ohio State University.

The study, by Pascall and research associate Jaesung Lee, evolved from a Food and Drug Administration survey of about 900 restaurants that found hand-washing dishes sometimes left a little more than desired.

Their tests showed that dishwashing by hand is effective in killing bacteria, especially when the water is hot and a sanitizer is used.

And they discovered that the dishes still met FDA standards when they cheated a bit on water temperatures. (The 110 degrees Fahrenheit minimum recommended by the FDA is pretty hot on the hands.)

Before washing, the researchers dirtied dishes and utensils separately with cheese, egg, jelly, lipstick and milk and then applied listeria and E. coli bacteria to the lot.

Their work found that dried milk and cheese harbored the most bacteria by providing lots of nutrients for germs. And they discovered that lipstick, which was the most difficult item to remove, kills germs, Lee said.

Lee, chief dishwasher and bacteria counter, wrote about the research in the current issue of the Journal of Food Engineering.

Gina Nicholson, of the Columbus Health Department, instructs restaurant employees on hygiene. She said restaurants use a three-step process to manually wash dishes: They're scrubbed in soapy water, rinsed with water and rinsed again in a sanitizer.

Lee made three clockwise and three counterclockwise motions with a sponge on the dishes and glasses, and three forward and three backward rubs on utensils and trays.

Washing dishes in hot dishwater, followed by soaking them in extra sanitizers, eliminated nearly all of the bacteria. Lee said the results were about as good when dishes were washed in soapy water at room temperature, then rinsed and put in a weak sanitizing solution.

The research was performed in association with Troy, Ohio-based Hobart Corp., which makes dishwashing machines for restaurants. The U.S. Department of Agriculture funded the \$25,000 study.

Nicholson said she learned something new.

"The bacteria were scared of lipstick," she said.

mlafferty@dispatch.com

- Dishwater doesn't have to be that hot, study finds
- Measuring cleanliness