

Raise a glass to the newest antibiotic

BY STEPHEN STRAUSS

Could it be that the next time an outbreak of food or water poisoning strikes Canada, the medical officer of health will sternly announce: Cook your meat; wash your vegetables; boil your water and down a glass or two of white wine?

The white wine/food safety connection has arisen out of a convincing bit of soon-to-be published research by Mark Daeschel at Oregon State University.

Over the years, food folklore has suggested that wine functions as a kind of alcoholic antibiotic. For this reason, raw-oyster eaters have long been advised to drink white wine in between slurping down their easily contaminated, uncooked appetizers.

Not to mention the preservative function of wine when it is used as

a meat marinade.

Prof. Daeschel decided to scientifically test the wine-antibiotic hypothesis because nobody as far as he could tell had done so. "You can make assumptions about a whole lot of stuff and sometimes your assumptions right and sometimes they are diametrically wrong," he said.

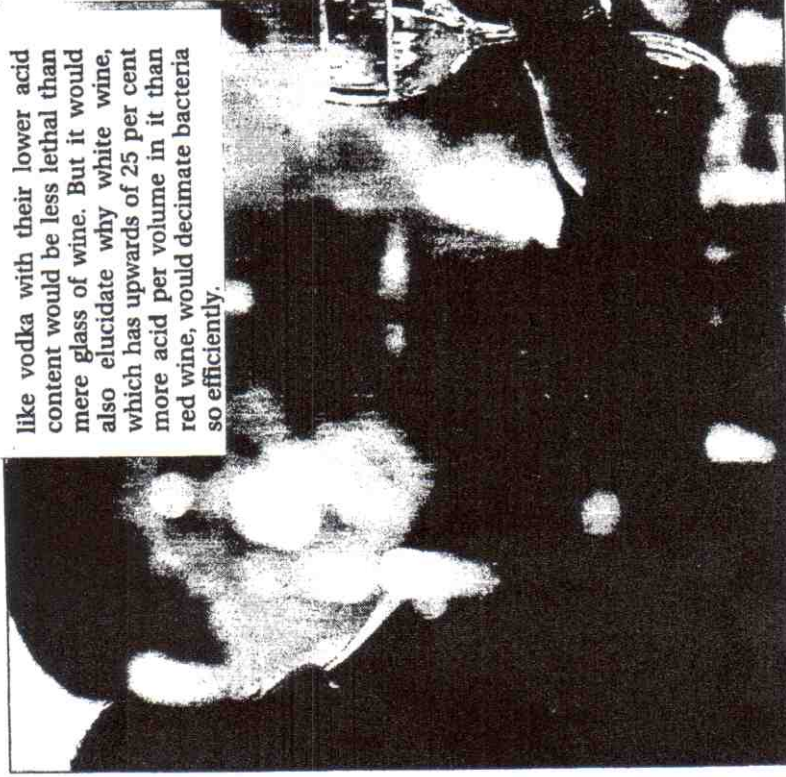
In aid of his experiment, he used an artificial stomach in which he put artificial gastric fluid, baby food and *E. coli* 0157 or salmonella bacteria. The *E. coli* strain being used achieved infamy in Canada in 2000 when it killed seven and sickened more than 2,000 in the small Ontario town of Walkerton.

The baby food was chosen because it is sterile and has a precisely determined nutritional content.

When either white or red wine was added to the stomachs, an im-

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like vodka with their lower acid content would be less lethal than mere glass of wine. But it would also elucidate why white wine, which has upwards of 25 per cent more acid per volume in it than red wine, would decimate bacteria so efficiently.



Still, Prof. Daeschel is loath to suggest that people consume a glass or two of wine as a kind of kitchen antibiotic. It is not just dose, but timing that matters. "If you ate a bit of contaminated meat and waited three hours to drink wine, by that time, the food might have been digested and left the stomach," he said. Nonetheless, anecdotal evidence from an outbreak of shigella poisoning on a cruise ship in 1994 suggests that those who drank were less likely to get sick than those who too virtuously abstained.

What Prof. Daeschel is more bullish about is the application of his discovery to a trough in the white-wine market. "In California this year, there is such a glut of white wine that people are letting their grapes rot rather than pick them," he points out. And even if they are picked, *Chateau de Plonk* wines are selling for 50 to 75 cents a gallon (U.S.).

His idea is to transform the wine into a general disinfectant — think instead of Pinesol something like Winesol.

His essence of white wine would result in a dry, alcoholic substance that would leave a house both bereft of bacteria and smelling delicately of wine.

A new study shows that white wine may be more effective than red at killing bacteria.

coli.

Initially, the difference in killing ratio was completely counterintuitive because it has been thought that red wine with its higher alcoholic content would be more lethal to microbes than white wine. However, looking at the results, the Oregon State group now thinks that there is a kind of one-two punch between the alcohol and

the acid levels in the wines.

"The alcohol makes the cell walls of the bacteria kind of leaky and this makes it easier for the acids to get in and do their killing," said Prof. Daeschel, who will publish his results in the January issue of the *Journal of Food Science*.

This would explain a lower why things like beer with both alcoholic content and distilled spirits

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