



Where's the beef? *Consumer Reports'* studies of pesticides and irradiated meat have come under fire.

## US chemist attacks consumer magazine's food safety work

### Jim Giles

A food chemist has accused a leading consumer publication of using flawed science in its food safety surveys.

The researcher says that *Consumer Reports*, which has four million subscribers, ignored published research that contradicted its tests on food irradiation, and used an unscientific toxicity scale to measure pesticide residues.

Joseph Rosen, who works at Rutgers University in New Brunswick, New Jersey, made the claims at a session on organic food at the American Chemical Society's annual meeting in Philadelphia on 23 August. The magazine rejects the allegations, saying its surveys are based on rigorous science developed by professional toxicologists and statisticians.

Rosen says he first looked into *Consumer Reports'* methods after reading an article on irradiated meat, which it published in August 2003. This examined US food producers' claims that treating meat with beams of electrons or  $\gamma$ -rays kills harmful bacteria. It concluded that treated meat had a "slight off-taste" and offered no safety benefit to the "careful cook".

The magazine regularly examines industry claims, and its defenders say that it is a counterweight to the food industry's marketing. The magazine is "highly effective" in its approach, says Caroline Smith-Dewaal, food safety director at the Center for Science in the Public Interest, a Washington-based group that campaigns on food science issues.

But Rosen says that *Consumer Reports* based its irradiation article on reports from just two trained taste testers, and ignored a 2003 test involving more than 100 subjects conducted by researchers at Kansas State University. That study found that

consumers could not tell irradiated from non-irradiated meat.

Consumers Union, the New York-based advocacy group that publishes *Consumer Reports*, says that it knew of the Kansas research, but that the magazine does not typically run consumer panels. "We evaluate attributes and not preferences," says Urvashi Rangan, a toxicology and environmental health expert with the union. She adds that the article stated that the off-taste was subtle and might be missed by untrained tasters.

Rosen also says it is alarmist for the magazine to state that the energy in irradiation is "150 times the dose capable of killing an adult", as consumers are not exposed to the beams. Rangan counters that the measure was needed to correct food industry promotional material, which portrays the beams as no more powerful than sunlight.

The magazine's work on pesticides also aroused Rosen's ire. A March 1999 article used a specially designed toxicity scale to compare residues on fruits and vegetables. *Consumer Reports* concluded that parents should avoid giving children large amounts of some produce.

Rosen says the evaluations used arbitrary factors, and that the scale confuses the maximum safe amount of a residue that can be consumed at once with that which can be consumed over a lifetime. Rangan concedes there is an arbitrary element to the weightings, but says that they were needed to allow comparison of residues in different foods.

"I was struck by the shoddiness of their work," says Rosen, who advises the American Council on Science and Health, a lobby group generally supportive of the food industry. He says he gets no research money from the organization. ■

## Only pride hurt as predicted quake fails to strike California

### David Cyranoski

Time has run out for a researcher's prediction that a large earthquake would hit California by 5 September. Vladimir Keilis-Borok had predicted that such an event would occur at some point in the past nine months. But, fortunately for residents, nothing of the kind happened.

Keilis-Borok, a geophysicist at the University of California, Los Angeles, hasn't given up. "We can use the mistakes to improve our methodology," he says.

Keilis-Borok has had some success in the past. In 2003, his team made forecasts that were fulfilled by the Tokachi-oki earthquake in Japan on 26 September, and the Californian San Simeon earthquake on 22 December.

Recently he predicted that an earthquake of magnitude 6.4 or greater would hit somewhere in 32,000 square kilometres of southern California (see map). The United States Geological



Survey and the California Earthquake Prediction Evaluation Council said the method "appears to be a legitimate approach". But they took no action; a nine-month window cannot be used to make decisions about evacuation.

Keilis-Borok looks for patterns in the smaller earthquakes that precede large ones. He uses a similar method to analyse other systems such as crime waves and elections; his numbers predict that George W. Bush will win in November.

But some experts think Keilis-Borok's successes have been down to luck. Based on earthquake history, there is a 30% chance of one hitting Tokachi-oki during any nine-month period, although there is only a 2–5% chance of one in San Simeon. Tom Jordan, head of the Southern California Earthquake Center in Los Angeles, says Keilis-Borok's method uses complex algorithms that will have to be more thoroughly evaluated before critics are won over. ■