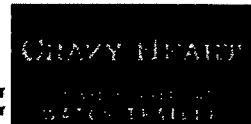


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# Safety of Beef Processing Method Is Questioned

By MICHAEL MOSS

Eight years ago, federal officials were struggling to remove potentially deadly E. coli from hamburgers when an entrepreneurial company from South Dakota came up with a novel idea: injecting beef with ammonia.

The company, Beef Products Inc., had been looking to expand into the hamburger business with a product made from beef that included fatty trimmings the industry once relegated to pet food and cooking oil. The trimmings were particularly susceptible to contamination, but a study commissioned by the company showed that the ammonia process would kill E. coli as well as salmonella.

Officials at the United States Department of Agriculture endorsed the company's ammonia treatment, and have said it destroys E. coli "to an undetectable level." They decided it was so effective that in 2007, when the department began routine testing of meat used in hamburger sold to the general public, they exempted Beef Products.

With the U.S.D.A.'s stamp of approval, the company's processed beef has become a mainstay in America's hamburgers. McDonald's, Burger King and other fast-food giants use it as a component in ground beef, as do grocery chains. The federal school lunch program used an estimated 5.5 million pounds of the processed beef last year alone.

But government and industry records obtained by The New York Times show that in testing for the school lunch program, E. coli and salmonella pathogens have been found dozens of times in Beef Products meat, challenging claims by the company and the U.S.D.A. about the effectiveness of the treatment. Since 2005, E. coli has been found 3 times and salmonella 48 times, including back-to-back incidents in August in which two 27,000-pound batches were found to be contaminated. The meat was caught before reaching lunch-rooms trays.

In July, school lunch officials temporarily banned their hamburger makers from using meat from a Beef Products facility in Kansas because of salmonella — the third suspension in three years, records show. Yet the facility remained approved by the U.S.D.A. for other customers.

Presented by The Times with the school lunch test results, top department officials said they were not aware of what their colleagues in the lunch program had been finding for years.

In response, the agriculture department said it was revoking Beef Products' exemption from routine testing and conducting a review of the company's operations and research. The department said it was also reversing its policy for handling Beef Products during pathogen outbreaks. Since it was seen as pathogen-free, the processed beef was excluded from recalls, even when it was an ingredient in hamburgers found to be contaminated.

The Beef Products case reveals a schism between the main Department of Agriculture and its division that oversees the school lunch program, a divide that underscores the government's faltering effort to make hamburger safe. The U.S.D.A. banned the sale of meat found to be contaminated with the O157:H7 strain of E. coli 15 years ago, after a deadly outbreak was traced to Jack in the Box restaurants. Meat tainted with salmonella is also a hazard. But while the school lunch program will not buy meat contaminated with salmonella, the agriculture department does not ban its sale to the general public.

Even so, E. coli outbreaks nationwide have increased in recent years. And this summer, two outbreaks of particularly virulent strains of salmonella in hamburger prompted large recalls of ground beef across several states.

Although no outbreak has been tied to Beef Products, officials said they would thoroughly scrutinize any future industry innovations for fighting contamination "to ensure that they are scientifically sound and protect public health," and that they were examining the government's overall meat safety policies.

The founder and owner of Beef Products, Eldon N. Roth, declined requests for interviews or access to the company's production facilities. Responding to written questions, Beef Products said it had a deep commitment to hamburger safety and was continually refining its operation to provide the safest product possible. "B.P.I.'s track record demonstrates the progress B.P.I. has made compared to the industry norm," the company said. "Like any responsible member of the meat industry, we are not perfect."

Beef Products maintains that its ammonia process remains effective. It said it tests samples of each batch it ships to customers and has found E. coli in only 0.06 percent of the samples this year.

The company says its processed beef, a mashlike substance frozen into blocks or chips, is used in a majority of the hamburger sold nationwide. But it has remained little known outside industry and government circles. Federal officials agreed to the company's request that the ammonia be classified as a "processing agent" and not an ingredient that would be listed on

labels.

Within the U.S.D.A., the treated beef has been a source of friction for years. The department accepted the company's own study as evidence that the treatment was effective. School lunch officials, who had some doubts about its effectiveness, required that Beef Products meat be tested, as they do all beef used by the program.

School lunch officials said that in some years Beef Products testing results were worse than many of the program's two dozen other suppliers, which use traditional meat processing methods. From 2005 to 2009, Beef Products had a rate of 36 positive results for salmonella per 1,000 tests, compared to a rate of nine positive results per 1,000 tests for the other suppliers, according to statistics from the program. Beef Products said its testing regime was more likely to detect contamination.

Despite some misgivings, school lunch officials say they use Beef Products because its price is substantially lower than ordinary meat trimmings, saving about \$1 million a year.

Another snapshot of processed beef's performance emerges from confidential records of tests in 2007 by the food giant Cargill. In the preceding year and a half, Cargill, which used more than 50 vendors, suspended three facilities for excessive salmonella; two were Beef Products plants, records show.

Since introducing the treated meat, Beef Products has faced the challenge of balancing safety with taste, records and interviews show.

Pathogens died when enough ammonia was used to raise the alkalinity of the beef to a high level, company research found. But early on, school lunch officials and other customers complained about the taste and smell of the beef. Samples of the processed beef obtained by The Times revealed lower levels of alkalinity, suggesting less ammonia was used.

Beef Products acknowledged lowering the alkalinity, and the U.S.D.A. said it had determined that "at least some of B.P.I.'s product was no longer receiving the full lethality treatment."

Beef Products said it had submitted new research to the agriculture department showing that its treatment remained effective with lower alkalinity. Agriculture officials said Beef Products' latest study is under review.

*Griff Palmer contributed reporting.*