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# The Food Safety Performance of Ground Beef Suppliers to the National School Lunch Program

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## What Is the Issue?

The Agricultural Marketing Service (AMS) of the United States Department of Agriculture (USDA) bought \$150 million worth of raw and cooked ground beef products in 2011 for the National School Lunch Program (NSLP). Schools purchased about one-third of this ground beef as raw product and two-thirds as precooked hamburger patties, Salisbury steaks, cooked ground beef, and other products.

The food safety of meals served in the Nation's schools concerns many Americans, especially those with children in school. Because ground beef is a staple of school menus and has suffered a number of product recalls in recent years, AMS gives the food safety of ground beef particular attention. AMS requires ground beef suppliers to adhere to strict tolerances for *Salmonella spp* and other potentially harmful pathogens. At the same time, AMS is obligated to select low-cost bidders that agree to meet its standards. Ground beef suppliers achieve food safety by investing in sanitation and cleaning. However, these food safety investments are costly and must be recouped through a higher bid price. AMS ground beef suppliers must, therefore, carefully evaluate their bid price relative to their food safety investments.

An article in *USA Today* in December 2009 and other later media reports stated that AMS's food safety standards for ground beef suppliers to NSLP were less stringent than those of major restaurant chains. AMS then strengthened its standards, but experts at the National Academy of Sciences asserted that the revised standards lacked sufficient scientific basis and had other shortcomings. Despite these concerns about ground beef safety and the system's incentive to bidders to underinvest in food safety, no economic analyses of the effectiveness of AMS standards have been published.

This report fills that void by examining economic incentives for suppliers of ground beef to NSLP to improve the food safety of their products. Ground beef suppliers' performance on tests for *Salmonella spp* is used as a measure of food safety. The results have implications for the food safety programs of AMS and USDA's Food Safety and Inspection Service (FSIS), which regulates ground beef sold in general commerce. The results are also relevant to fast food restaurants, grocery stores, and other buyers for the commercial market that require their suppliers to surpass FSIS standards.

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## What Did the Study Find?

Ground beef suppliers to NSLP must be low-cost bidders and also meet AMS's strict food safety standards. Producers of ground beef respond to these requirements by (1) seeking AMS approval to supply NSLP and bidding on contracts (active suppliers), (2) seeking AMS approval and *not* bidding on contracts (inactive suppliers), or (3) choosing not to gain approval and selling only in the commercial market. ERS researchers examined the food safety performance for all three categories. Gaining AMS approval to bid to supply NSLP is relatively low cost, but actually supplying ground beef to schools may be costly because AMS suppliers must meet strict food safety tolerances.

ERS researchers found that:

- The food safety performance of active AMS ground beef suppliers to NSLP exceeded the performance of inactive AMS and commercial market suppliers, suggesting that AMS standards encourage superior food safety performance. The data show that *Salmonella spp* contamination in ground beef tested by AMS was nearly absent.
- The food safety performance of inactive AMS ground beef suppliers was worse than that of all other ground beef suppliers on tests that were one-half to one-tenth the FSIS tolerance for *Salmonella Spp*. These relatively weak results imply that AMS's priority on low costs may encourage suppliers that invest less in food safety to seek AMS approval to supply NSLP. Nonetheless, inactive suppliers performed very well, on average, greatly exceeding the FSIS tolerance for *Salmonella spp*.
- The food safety performance of active AMS ground beef suppliers on products sold in the commercial market matched that of commercial suppliers and surpassed that of inactive AMS ground beef suppliers on standards that were one-half, one-fourth, and one-tenth the FSIS tolerance for *Salmonella spp*.
- Some evidence suggests that AMS suppliers consider their food safety performance prior to bidding on contracts to supply the NSLP and place bids only if they are confident their performance meets AMS food safety standards. AMS suppliers that do not bid on NSLP contracts sell their ground beef in the commercial market to other buyers.

## How Was the Study Conducted?

ERS researchers used probit regressions to estimate the effect of being a particular type of supplier (active and approved, inactive and approved, commercial supplier only) on the probability that the ground beef produced by the establishment exceeded the tolerance for *Salmonella spp* established by FSIS.

Data came from FSIS and AMS. The FSIS data included *Salmonella spp* test results, USDA administrative data, and Dun & Bradstreet information on firm characteristics. AMS data included *Salmonella spp* test results and contract bidding data.