Simple post-packaging process halts food contamination
Industry News

Scientists from Purdue University have discovered a simple post-packaging pasteurization process for ready-to-eat (RTE) meats that eliminates contamination by the deadliest of the bacterial food contaminants. Lead researcher Tim Haley, from Purdue’s Center for Food Safety Engineering, explained that the scientists used sliced bologna tainted with Listeria monocytogenes, packaged it in vacuum-sealed plastic bags, and then submerged the packages in hot water. Next, they immediately placed the bagged luncheon meat in cold water. This two-step procedure, termed high-temperature-short-time process, killed the microbes and also apparently extended the meat’s shelf life.

Haley will present his findings at this month’s Institute of Food Technologists’ Annual Meeting in Anaheim, CA. It is hoped that the process could be applied to similar deli meats and could eliminate other pathogens. Haley said the method possibly could be part of a national biosecurity system to protect against deliberate attempts to cause illness through food contamination.

"The problem with RTE meats, including luncheon meat, hot dogs, and deli meat, is that prior to final packaging, Listeria still can contaminate," said Haley, an assistant professor in the department of food science and director of the Computer Integrated Food Manufacturing Center. "This can happen if the bacteria are present in the air, on the equipment, or in the water in the processing plant. If the food handlers have been exposed to Listeria, they can spread it, even if they are wearing gloves."

Researchers have focused on Listeria because as few as ten of the bacteria cells can cause illness and, though it is a relatively rare biological contaminant, its fatality rate of 20 percent is the highest of the food pathogens, according to the Centers for Disease Control and Prevention.

Haley and his team investigated pasteurization as a possible way to eliminate food pathogens from RTE meats because similar processes have been used for other foods, and it is something food manufacturers could easily and quickly implement. However, there is a concern that the time required to pasteurize a package of meat, rather than slices as used in the study, would require too much time and the quality of the meat would be affected.

"This approach is similar to the pasteurization method used for canned food and milk, so it should be acceptable to consumers as a safeguard against bacterial contamination," said Haley. Funding for this project was provided by USDA.