

# INDUSTRY LAUNCHES FOOD SAFETY INITIATIVE

The chicken industry has announced a two-track approach to higher level of food safety, including the testing of new interventions and support of a large-scale field research project.

U.S. chicken industry leaders announced a two-track approach to further improvement in food safety: a commitment to test promising new interventions on the farm and in processing plant, and participation in government-sponsored research aimed at reducing campylobacter on raw chicken. The announcement came at a press conference during the National Chicken Council's annual meeting in Washington, D.C.

"Today the chicken industry steps to the forefront of the battle to improve food safety in America," said Jim Perdue, chairman of Perdue Farms Inc. and outgoing chairman of the National Chicken Council. "The measures being tested should add significantly to the already large margin of safety in our ready-to-cook products."

On hand for the press conference were more than 20 members of the press and media, including local media, trade press and a CBS news crew. Secretary of Agriculture Dan Glickman praised the program in his remarks to the conference's participants. "I commend you for these efforts," he told conference participants. "The stronger our partnership, the better we are able to improve on what is already the safest food supply in the world," he said. Glickman noted that companies with almost 90 percent of nationwide production have pledged to participate in the program and called this a "staggering number."

Caroline Smith DeWaal, food safety director at the Center for Science in the Public Interest, said the program was a positive move by the industry. "It's a definite sign that the poultry industry is taking more responsibility for cleaning up its product than they have in the past," she said. "they still have a long way to go, but at least they are on road."



John Bekkers at press conference in Washington D.C.

*The objective of the program is to test out a wide variety of interventions in actual production and processing settings.*

## Twin Tracks

"We have already made enormous progress by reducing salmonella levels on raw chicken by fifty percent or more," said Dr. James E. Marion, technical advisor to the National Chicken Council. "The measures we are announcing today are the twin tracks that will help us make great strides in bringing microbial levels down to the lowest feasible levels on raw chicken."

The objective of the program is to test out a wide variety of interventions in actual production and processing settings. A number of interventions have worked well in laboratory settings but need to be tried on a large scale to see if they are effective and practical, Dr. Marion said.

"By means of this program, industry is reaffirming its commitment to food safety and its commitment to improvement in the microbiological profile of

the raw product," said John Bekkers, president and chief operating officer of Gold Kist, Inc., and chairman of the National Chicken Council. "We are proud of what we have accomplished already and we look forward to doing an even better job in the future."

In USDA baseline tests in 1996, salmonella was found on 20 percent of chicken carcasses. That incidence level was cut in half by the middle of 1998 as companies installed new equipment and processes to meet government standards and their own quality assurance objectives. Campylobacter is still usually found on a majority of chicken carcasses. Both salmonella and campylobacter are killed by the heat of normal cooking.

## Industry Track

The "industry track" of the program is a commitment by individual compa-

## LARGEST EVER FIELD STUDY OF CAMPYLOBACTER

The chicken industry made possible the largest-ever field study of the sources of campylobacter organisms in live chickens and poultry production and processing operations. The study was headed by Norman J. Stern, USDA Agricultural Research Service Poultry Microbiological Research Unit, Athens, Ga.

Four companies participated in the study conducted by Dr. Stern's team, making it possible for them to take samples from 32 broiler flocks and eight processing plants. Almost 11,000 samples were taken. Samples were also assayed for salmonella.

Chicken companies have agreed to participate in further large-scale field testing by the ARS team of a package of interventions aimed at reducing campylobacter and salmonella organisms on live chickens.

Companies will test the interventions in company-owned hatcheries and in grow-out houses under contract to the companies.

The package consists of the following interventions:

- Sanitization of broiler eggs pre-hatch to kill campylobacter cells adhering to the surface of the eggs. Hydrogen peroxide would be used to sanitize the eggs in company hatcheries.
- Use of a competitive exclusion product to colonize the digestive system of baby chicks with harmless bacteria, hopefully crowding out the salmonella and other microorganisms that could otherwise reproduce in the chicks
- Use of a litter treatment to reduce or eliminate the presence of campylobacter and salmonella in the bedding material (litter) in chicken grow-out houses, which can otherwise harbor microorganisms and allow them to spread to individual birds and from flock to flock

### What Researchers Learned About Campylobacter

Following is an abstract of the findings of Dr. Norman Stern's initial study into campylobacter (Flow of *Campylobacter* spp. in United States Broiler Operations, N.J. Stern, P.F. Cray, J.S. Bailey, S.E. Craven, and N.A. Cox. USDA-Agricultural Research Service, Russell Research Center, Athens, Ga.).

The goal of the project was to determine the most significant sources of *Campylobacter* spp. in poultry operations. Almost 11,000 samples from 32 broiler flocks were quantitatively (for only feces and carcass rinses) and qualitatively evaluated. Genetic fingerprinting of the isolates is ongoing and will enhance identification of causal relationships. Prior to chicken placement, *Campylobacter* spp. was isolated from both mice and wild bird feces in or near the chicken house. Out of the hatchery, one of 775 paper pads tested yielded the organism. Insects, water lines and drinkers, litter, fan blade swabs, non-broiler animals on the farm, farmer's boot swabs and fly strips were positive only after the flocks became infected. After six weeks of production about 54 percent, and after eight weeks about 96 percent were colonized at levels of  $10^{5-8}$ cfu/gm. Comparatively low frequencies (~30 percent) and levels ( $\sim 10^2$ cfu *Campylobacter* spp. per carcass) were found. This reduction in public exposure (on the fully processed carcass) from previous frequencies approaching 100 percent and levels of  $\sim 10^4$ cfu *Campylobacter* spp. per carcass appears to have been accomplished primarily by increased application of chlorination in the chiller tanks. Among the four integrated cooperators, carcasses ranged from 21 to 41 percent positive. Difference in frequencies of positive infected excreta was observed in high (10.7 percent) vs. low (7.7 percent) husbandry production efficiency, but this was considered as unimportant. Carcasses were positive at rates of 28 percent in spring, 45.7 percent in summer, 18.5 percent in fall and 24.2 percent in winter.

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Today the chicken industry steps to the forefront of the battle to improve food safety in America.—Jim Perdue

panies to test new interventions at both the farm level and in the processing plants. Each participating company has pledged to adopt at least one such intervention at each level. (Since chlorine is already widely used, it does not count as a "new" intervention in this program; the same applies to chlorine dioxide, another form of chlorine.)

Companies representing almost 90 percent of nationwide chicken production have pledged to participate in the program.

Interventions being tested include:

- Trisodium phosphate, which is used to rinse chicken carcasses and reduce microorganisms
- Competitive exclusion
- Acidified sodium chlorite used as a spray or wash to control microorganisms
- Electronic pasteurization to achieve a near-total kill of microbes on treated products
- Treatment of the bedding material (litter) used by live birds

### Second Track

On the second track, four chicken companies participated in a research program headed by Dr. Norman J.

Stern of the Poultry Microbiological Safety Research Unit of USDA's Agricultural Research Service in the largest-ever study of the sources of campylobacter in live chickens and in poultry operations. Participation by the companies made it possible for ARS scientists to take almost 11,000 samples from broiler flocks that included over half a million birds and to test for campylobacter and salmonella at several points in processing plants. The study ran over a period of 12 months to gather data from all four seasons.

"This study gave scientists and our industry new insights into the routes by which campylobacter gets into chickens," Dr. Marion said. "It helps give us a much better handle on how to keep it out or reduce the numbers present."

Several companies have already agreed to participate in a follow-up study, in which they will test a bundle of interventions which, taken together, are expected to have a significant impact on the presence of microorganisms—salmonella as well as campylobacter—on raw chicken. The interventions have been shown to be effective in laboratory studies, but the in-

cause human health problems if they contaminate chicken meat that is not cooked or handled properly.

- Use of a litter treatment to reduce or eliminate the presence of microorganisms in the bedding material (litter) in chicken grow-out houses, which can otherwise harbor microorganisms and allow them to spread to individual birds and from flock to flock.

"Preliminary research has indicated that this is the best package of interventions at this time aimed at organisms such as salmonella and campylobacter," Dr. Marion said.

"What the companies will do now is test this package on a large scale and see if it works as well in the production environment as in the laboratory," he said. ■



James Marion

dustry and scientists want to know if they will work in large-scale usage.

The proposed package of interventions consists of the following:

- Sanitization of eggs pre-hatch to kill microorganisms adhering to the surface of the eggs. Hydrogen peroxide would be used to sanitize the eggs in company hatcheries.

- Use of a competitive exclusion product to colonize the digestive system of baby chicks with harmless bacteria, hopefully crowding out the pathogenic cells that might otherwise reproduce in the chicks. The pathogenic cells do the chicks no harm but can