

Purpose

This quick exploratory study was designed to provide some information to inform policy on *Listeria* while also serving to help plan a more extensive study of hazard analyses and the content of HACCP plans. Of primary concern was plant response to the Federal Register Notice (8-99) that they reassess their HACCP plans for control of *Listeria monocytogenes* contamination. Of interest was whether plants address *Listeria* contamination in HACCP plans or outside HACCP plans, or by other means.

Methodology

This brief report provides a description of the activities that approximately 30 randomly selected large and small plants undertook to respond to the 1999 Federal Register request. The findings presented here, although not representative of the approximately 1270 large and small Ready to Eat (RTE) plants nationwide, present a snapshot of the experiences of some randomly selected plants as reported by FSIS supervisory inspection personnel in an email survey.

This survey effort explored how plants responded to the FSIS Federal Register request in terms of how the reassessments were done (if they were done), how the plans were modified (if they were modified), how the plants communicated the results of their reassessments, and other actions plants have taken to control *Listeria* contamination.

Key Findings

Almost all of the plants in this sample responded to the FSIS 1999 Federal Register Notice on *Listeria* by taking some action. Almost all plants in the sample responded to the Notice by reviewing their HACCP plans and documenting their reassessment in their hazard analysis.

The majority of plants also discussed their determinations with inspection personnel.

About half the plants added or modified CCPs in their HACCP plans, while others added or modified verification activities, critical limits, or corrective actions. The majority of plants have addressed *Listeria* in all their respective hazard analyses for all their RTE products.

About a quarter made no modifications to their HACCP plans. Many plants chose to deal with *Lm* contamination outside their HACCP plan. In fact, as industry has become more confident that *Lm* is under control, some plants have deleted CCPs and moved *Lm* control outside the HACCP plan.

Plant Reassessment of HACCP Plans

How reassessment was done

FSIS personnel supplied a list of all the things that a plant did to conduct its *Listeria monocytogenes* reassessment of its HACCP plan. (Therefore, since each plant may have conducted several activities, these will not sum to 100%.)

- Almost all plants responded to the Notice by reviewing their HACCP plans and discussing the Notice internally among plant personnel.
- In addition, over half of the plants reviewed their test data and conducted tests for *Lm*.
- Almost all plants are now listing *Lm* contamination in their hazard analyses for all their RTE products.
- Close to two thirds of the plants modified their hazard analysis. For example, *Lm* was featured and listed for examination in more places in the process. Assessment and control measures on

Lm or *Lspp.* were added. Sanitizing of areas for final product preparation was added.

How HACCP plans were modified

FSIS personnel supplied a list of all the ways that each plant modified their HACCP plans.

- Approximately three-fourths modified their HACCP plans:
 - Close to half of the plants added or modified CCPs in their HACCP plans.
 - Over a third of the plants added or modified verification activities, or critical limits.
 - One fourth of the plants added or modified corrective actions.
 - Some added testing for *Lm*, while others added testing for *Lspp.* (usually not both). However, because they felt *Lm* was under control, some later moved testing into the SSOP from the HACCP plan.

How plants conveyed their reassessment

FSIS personnel supplied a list of all the actions that a plant undertook to convey its reassessment activities.

- Almost all plants responded to the Notice by documenting their reassessment in their hazard analysis.
- The majority of plants also discussed their determinations with FSIS inspection personnel.

Plant justification for not modifying their HACCP plan

- About one-fourth of the plants decided not to modify their HACCP plans after

the reassessment, basing this decision most commonly on their in-plant testing data. That is, plants felt that *Lm* was under control with their current operations. However, most of these plants have found *Lspp.* or *Lm* in their testing since the reassessment; FSIS product testing at one plant was positive. Only the plant that had a positive finding through FSIS product testing reassessed its HACCP plan. (Plants found their positive results in environmental testing, rather than in product testing. The latter finding requires corrective and preventive action and possibly reassessment.)

- Some plants also determined that they had sufficient preexisting CCPs to control for microbial contamination and did not need to modify their HACCP plans specifically for *Lm*.
- Some plants determined that *Lm* contamination was a sanitation issue that did not need to be addressed in the HACCP plan. In fact, one plant conducted a hazard analysis and determined that there may be a possibility of *Lm* contamination, but after review at the corporate headquarters, management determined that *Lm* was adequately addressed in their SSOPs.

Identification of *Listeria* contamination after the reassessment

- More than a third of plants found, in their own testing, *Listeria* contamination since they had reassessed their HACCP plans to comply with the Notice in 1999.
- Half of those plants that found *Listeria* contamination (*L spp.*) after the original reassessment did not again reassess their HACCP plans.

Change from RTE to Not RTE

- Only a few plants in this sample changed their process categories from RTE to Not RTE since the reassessment Notice was issued. All of these changed their product labels. For example, when a cooked product tested positive for *Lm*, the label was changed from RTE to Ready to Cook. In another case, a meal also contained some not fully cooked non-meat components, so the label was changed to ensure cooking.

New RTE products

- Close to a third of the plants had added new RTE products since the Notice was issued. Of those plants for which supervisory personnel had information, the vast majority have addressed *Lm* in the hazard analyses for these products.

Other Actions to Control *Listeria*

Other actions outside HACCP plans: SSOPs and other actions

FSIS personnel supplied a list of all the actions that a plant undertook for *Lm* control, other than modifications to their HACCP plan. Most plants had taken actions outside their HACCP plans to control *Lm* contamination (many in addition to modifying their HACCP plans).

- Over two-thirds of the plants had reviewed their SSOPs, with some rewriting their SSOPs. Few moved sampling for *Listeria* from their SSOP to their HACCP plan; in fact several moved *Listeria* testing from their HACCP plan to their SSOP, as they felt comfortable that it was under control.
- FSIS personnel supplied a list of plant actions taken outside the HACCP or SSOP plans. Almost half of the plants had taken actions, including: training; testing of environments and products (by over two-thirds of the plants) ; adding sanitizers;

developing abatement programs; adding floor foamers and citric acid; modifying packaging rooms; footbaths, handwashing, and special clothes; repairs to improve sanitation; new construction; and increasing anti-microbial additives in products.

Use of Anti-microbial Additives

- Only a very small proportion of plants used additives as anti-microbial agents in their products.
- Only one out of the five plants that used additives addressed this use in their HACCP plans.

Regular Testing for *Listeria*

- FSIS personnel supplied information on all the ways each plant sampled for *Listeria*. Over two thirds of the plants conducted environmental testing for *Listeria*. This testing was most frequently done once per week (although some plants performed tests about two or three times per day).
- Less than two-thirds of the plants conducted product testing. The testing was most frequently done by plants once per quarter (although some plants conducted tests as frequently as three times per week and as infrequently as once per year). In some cases, plants would only perform product tests if environmental tests proved positive.
- Only one of the plants does not test for *Listeria*, and cites a scientific article to support this position. Plant personnel determined that, since they exceeded the time and temperature requirements for beef jerky production, testing for *Lm* was not needed.

**For further information, contact Jane
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