

CONSUMER ASSESSMENT OF SAFETY AND DATE LABELING STATEMENTS ON READY-TO-EAT (RTE) MEAT AND POULTRY PRODUCTS

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Abstract

Background: Some manufacturers are using antimicrobial additives such as sodium diacetate and sodium or potassium lactate in ready-to-eat (RTE) meat and poultry products to inhibit growth of *Listeria monocytogenes* and minimize the risk of listeriosis. The Food Safety Inspection Service has recommended the use of safety labels on these RTE products to inform consumers of actions taken to minimize growth of the pathogen. Manufacturers, however, have been reluctant to apply for the use of such labels for fear that product sales may be adversely affected.

Objective: This study was conducted to better understand consumer perceptions regarding the acceptability and usefulness of common date labels and potential "Listeria-control" labeling statements on RTE meat and poultry products.

Methods: Eleven focus groups were conducted in Colorado and Ohio; 6 groups (n=42) with women of child-bearing age and 5 groups (n=43) with senior-aged women. The focus groups were transcribed and analyzed for major and minor themes.

Results: Women in both age groups noticed date labels on packages but varied highly in their interpretation of these statements. "Use by" statements were considered clearer and more helpful than "Sell by" or "Best if used by" labels. Proposed safety labels explaining what "anti-listerial" agents had been used in RTE products were not well received. However, labels giving consumers instructions on how long to keep RTE products and when to discard them after opening were considered helpful and well received.

Conclusions: Recommendations should be made to manufacturers to standardize date labeling for RTE meat and poultry products and educate consumers on how to interpret such labels. Safety labels that combine date labeling and storage instructions without using technical terms would be most helpful to consumers. Manufacturers may also benefit from improved consumer confidence in the safety of RTE meat and poultry products.

Introduction

As one of the leading causes of foodborne related death, *Listeria monocytogenes* is on the forefront of prevention and risk analysis research and interventions. High-risk groups most commonly infected by the bacterium include pregnant women, fetuses, the elderly and the immune compromised (1).

L. monocytogenes (Lm) is able to survive in adverse conditions (refrigerator temperatures and high salt concentrations) putting certain food products at higher risk of contamination than others. Foods that are considered "ready-to-eat" (RTE), including deli and luncheon meats, soft cheeses made with unpasteurized milk, and cold hot dogs, have been associated with outbreaks of listeriosis, in part because of lack of heating immediately prior to consumption (1,2).

Deli meats and non-reheated frankfurters have been identified to have the highest per annum risk for causing human listeriosis in the U.S. (3). To reduce this risk, USDA-FSIS instituted additional regulations aimed at reducing *L. monocytogenes* contamination in RTE meat and poultry products, including the use of additives like sodium lactate and sodium diacetate shown to suppress the growth of Lm (4).

The new regulations also allowed manufacturers to put food safety enhancement claims on product labels describing validated processes used to minimize the presence of Lm in their products. Such labeling is voluntary and must be applied for. Manufacturing companies have expressed concern that such labels may "promote questionable food safety handling practices", deter consumers from products labeled with food safety statements, and ultimately result in reduction in future sales of the products.

Research is needed to determine if consumers would understand and value a LM food safety label indicating steps taken to improve the safety of the product.

Objectives

To assess the level of consumer awareness about *Listeria monocytogenes* in selected high-risk populations, and determine consumer opinions regarding date labels and various RTE meat and poultry product food safety labeling statements.



Methods

Eleven focus groups were conducted with senior-aged women (n=43) and women of child-bearing age (n=42) in Colorado and Ohio. Commonly used package date-labeling statements and potential "Listerial control" statements were shown to participants to elicit their opinions and interpretations of each statement.

Label Prototypes



Sample Population

	Senior Women	Young Women
Number	42	43
Age	93% > 65 yrs	98% between 19-45 yrs
Education	63% ≥ some college	81 ≥ some college
Ethnicity	88% Caucasian	71% Caucasian 14% Hispanic/Latino

Heard of <i>Listeria monocytogenes</i> ?	YES	NO
Senior Women (n=42)	32.6%	67.4%
Young women (n= 43)	45.2%	54.8%

Results

Package Date Labels:

Sell By: Participants saw as primarily intended for retailer's use on when to pull stock. Avoided purchasing products near or past date, but otherwise didn't find labels useful.

Best if Used By: Perceived as pertaining to best quality or freshness, not safety. Most participants would consume product after the date on package.

Use By and Expiration Date: Best well received date labels due to clarity and little room for misinterpretation. Most participants would freeze or eat the product by date listed on the package or discard if not consumed.

Food Safety-Based Labeling Statements:

"Sprayed with a solution of sodium lactate to prevent the growth of *L. monocytogenes*" and "Contains sodium diacetate and sodium lactate to prevent growth of *Listeria*" – Generally negatively received due to technical words and drawing attention to added sodium. Participants unsure what "*L. monocytogenes*" referred to. The additive names were unappealing to majority of participants.

"Formulated to further enhance product safety" – Majority of participants felt this statement was too vague and disliked the term "formulated" as it seemed as though their meat was being manipulated or further processed.

"For best results, use within 3 days of opening" – Generally well-received with only concern being that three days was too little time to consume an entire package of RTE meats. The word "results" was misleading and unappealing to a few participants.

"For best quality, purchase and use by the date shown on the package. Once opened, use within 7 days." – Most well received statement among all participants due to clarity and little room for misinterpretation. A few participants felt the statement seemed contradictory as to when the package should actually be opened or discarded.

"If pregnant or immune compromised, heat before consuming to reduce the risk of foodborne illness" – Most felt this was a good warning if they fell into one of these categories. However, it would deter many from purchasing a product with this label if pregnant or immune compromised.

Conclusions

Consumers found currently used date labeling statements confusing and unhelpful. They expressed the need for food safety-based "use by" labeling statements. Manufacturers are encouraged to provide more complete information on the safe storage and use of RTE meat and poultry products on package labels.

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