Food Safety and Inspection Service
Protecting Public Health and Preventing Foodborne Illness
2016 Veal Summit

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OUTLINE

• Beef and Veal Carcass Baseline Survey
• STEC Research
• Defining Veal
• NAD Veal FRN
• NRP Inspector-generated Testing Pilot
Food Safety and Inspection Service:  
**Beef and Veal Carcass Baseline Survey**

- To gain information on the effectiveness of sanitary dressing post-hide removal and slaughter interventions pre-chill in beef/veal slaughter establishments;
- To provide process control criteria for beef/veal slaughter establishments;
- To estimate the prevalence and quantitative level of pathogenic organisms;
- To estimate the presence and quantitative levels of indicator organisms
Food Safety and Inspection Service:
**Beef and Veal Carcass Baseline Survey**

- Two sampling locations: post-hide removal and pre-chill

- Eligible subclasses for the survey include steer, heifer, bull, cow, and dairy cow for beef and Bob veal, formula-fed veal, non-formula veal and heavy calves for veal

- Carcasses are tested for adulterant Shiga-toxin producing *E. coli* (STEC), *Salmonella*, generic *E. coli*, Total Aerobic Bacteria, Enterobacteriaceae, and coliforms

- Final report estimated to be completed 2016
### Veal at Post-Hide removal

<table>
<thead>
<tr>
<th>Veal Class</th>
<th>Sample Size</th>
<th>Salmonella Positives (%)</th>
<th>E. coli O157:H7 Positives (%)</th>
<th>STECs Positives (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula-fed Veal</td>
<td>173</td>
<td>4 (2.31%)</td>
<td>1 (0.58%)</td>
<td>41 (23.67%)</td>
</tr>
<tr>
<td>Bob Veal</td>
<td>98</td>
<td>29 (29.59%)</td>
<td>0 (0.0%)</td>
<td>22 (22.45%)</td>
</tr>
<tr>
<td>Heavy Calf</td>
<td>6</td>
<td>2 (33.33%)</td>
<td>1 (16.66%)</td>
<td>2 (33.33%)</td>
</tr>
<tr>
<td>Non Formula-fed Veal</td>
<td>3</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>1 (33.33%)</td>
</tr>
</tbody>
</table>
# Food Safety and Inspection Service: Beef and Veal Carcass Baseline Survey

## Veal at Pre-Chill

<table>
<thead>
<tr>
<th>Veal Class</th>
<th>Sample Size</th>
<th>Salmonella Positives (%)</th>
<th>E. coli O157:H7 Positives (%)</th>
<th>STECs Positives (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula-fed Veal</td>
<td>171</td>
<td>0 (0.00%)</td>
<td>0 (0.00%)</td>
<td>18 (10.52%)</td>
</tr>
<tr>
<td>Bob Veal</td>
<td>99</td>
<td>5 (5.05%)</td>
<td>1 (1.01%)</td>
<td>9 (9.09%)</td>
</tr>
<tr>
<td>Heavy Calf</td>
<td>6</td>
<td>1 (16.66%)</td>
<td>1 (16.66)</td>
<td>0 (0.00%)</td>
</tr>
<tr>
<td>Non Formula-fed Veal</td>
<td>4</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
</tbody>
</table>
Food Safety and Inspection Service: Beef and Veal Carcass Baseline Survey

### Distribution of STECS on Veal by STECS Group at Post-Hide Removal

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Count of Positives</th>
</tr>
</thead>
<tbody>
<tr>
<td>O26</td>
<td>11</td>
</tr>
<tr>
<td>O45</td>
<td>2</td>
</tr>
<tr>
<td>O103</td>
<td>36</td>
</tr>
<tr>
<td>O111</td>
<td>23</td>
</tr>
<tr>
<td>O121</td>
<td>0</td>
</tr>
<tr>
<td>O145</td>
<td>1</td>
</tr>
</tbody>
</table>

### Distribution of STECS on Veal by STECS Group at Pre-Chill

<table>
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<td>1</td>
</tr>
<tr>
<td>O103</td>
<td>16</td>
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<tr>
<td>O111</td>
<td>8</td>
</tr>
<tr>
<td>O121</td>
<td>1</td>
</tr>
<tr>
<td>O145</td>
<td>1</td>
</tr>
</tbody>
</table>
STEC CAP Grant
Reduce the occurrence and public health risks from eight targeted serogroups/serotypes of Shiga toxin-producing *Escherichia coli* (STEC-8) in beef using a quantitative microbial risk assessment (QMRA) platform.

This U.S. Department of Agriculture-National Institute of Food and Agriculture (USDA-NIFA) Coordinated Agricultural Project (CAP) grant, titled Shiga-toxigenic *Escherichia coli* (STEC) in the Beef Chain: Assessing and Mitigating the Risk by Translational Science, Education and Outreach, seeks to significantly advance evidence- and action-based beef food safety knowledge to protect public health.

This project is targeting the eight most important STEC serotypes that cause human illness in the U.S.
The three Core Pillars of this project are pre-harvest, post-harvest and consumer research, and all three of these initiatives feed directly into the framework of our project, that being a Quantitative Microbial Risk Assessment (QMRA) across the beef chain continuum.

The QMRA is the STEC CAP's centerpiece and is what drives all research, education and extension activities. This USDA-NIFA grant focusing on STEC in beef was awarded to the University of Nebraska-Lincoln (UNL) and includes 15 participating institutions and 51 collaborators.
Food Safety and Inspection Service: 
STEC Research

STEC CAP Grant

Additionally, wide representation from the beef production and processing industry, beef industry technology providers, wholesale/retail/food service sector, academic and regulatory experts, and consumer advocacy organizations are involved as research and education contributors or technical advisors as members of our Scientific Advisory Panel (SAP) and/or Stakeholder Advisory Board (SAB).

This grand effort to understand and control STEC throughout the beef system is a public-private partnership designed to generate advanced scientific understanding of STEC and to utilize this knowledge throughout the entire beef production to consumption continuum.

This is a 5 year NIFA Grant that recently included veal
FSIS has not developed official definitions for the subclasses of calves presented for slaughter.

FSIS has been classifying these animals based on the establishment’s designation of the animals: bob veal calves, formula-fed veal calves, non-formula-fed veal calves, and heavy calves.

Classification reflects the industry definitions e.g., bob veal calves (≤ 150lbs or 3 weeks of age (or less)), formula-fed veal calves (151-400lbs), non-formula-fed veal calves (151-400lbs), and heavy calves (> 400lbs).
Requirements for the Disposition of Non-ambulatory Disabled Veal Calves

Published 13 May 2015

FSIS has proposed amending its regulations on ante-mortem inspection to remove a provision that permits establishments to set apart and hold for treatment veal calves that are unable to rise from a recumbent position and walk because they are tired or cold.

Under the proposed rule, non-ambulatory disabled veal calves that are offered for slaughter will be condemned and promptly euthanized.

Final FRN still under development
Prohibiting the slaughter of all non-ambulatory disabled veal calves will improve compliance with the Humane Methods of Slaughter Act of 1978 (HMSA) and the humane slaughter implementing regulations.

It will also improve the Agency's inspection efficiency by eliminating the time that FSIS inspection program personnel (IPP) spend re-inspecting non-ambulatory disabled veal calves.

FSIS is also proposing to clarify in the regulations that all non-ambulatory disabled cattle must be promptly disposed of after they have been condemned.
Non-Ambulatory Disabled Veal Calves and Other Non-Ambulatory Disabled Livestock at Slaughter;
Published 7 February 2011
Petition for Rulemaking

FSIS requested comments on two petitions (HSUS & Farm Sanctuary) for rulemaking submitted to the Agency that raise issues associated with the disposition of non-ambulatory disabled veal calves and other non-ambulatory disabled livestock at slaughter.
The petition requests that the USDA Food Safety and Inspection Service repeal a provision in section 309.13(b) of the Code of Federal Regulations that allows veal calves who are unable to rise from a recumbent position because they are thought to be "tired or cold" to be "set apart and held" for treatment and potential slaughter for human consumption.
In 2014, FSIS launched a nation-wide questionnaire to better understand the thought process Public Health Veterinarians (PHVs) undergo when selecting animals or carcasses for in-plant screening.

The questionnaire also queried PHVs as to their needs to improve their technical acumen. Questionnaire results indicated PHVs were interested in more Agency guidance and training (correlation) regarding NRP in-plant screening.
FSIS developed an Excel tool capable of outlining which conditions for a given slaughter class resulted in the highest number of laboratory confirmed positives.

Using this tool, FSIS was able to predict the change in lab confirmed positive results that may increase if PHVs concentrate on the top conditions (defined as those most likely to result in a lab-confirmed positive result) rather than all conditions equally.
The intent of the pilot structure is to evaluate two hypotheses:

1) Conditions selected for in-plant screening do vary within a slaughter class and should be prioritized to maximize Agency resources.

2) Conditions should be developed for individual slaughter classes because of varying husbandry practices including the purpose of animals and the age at which they are slaughtered.
Dairy Cow and Bob Veal were selected as the initial slaughter classes because these are the two classes where in-plant screening continues to occur at the highest rate and where most of the violations are identified in the NRP.

Establishments selected for the pilot were those where the PHV is screening a high percentage of suspect and retained carcasses to enable FSIS to monitor the conditions leading to railed out carcasses.
Phase 1 of the pilot began in October 2015 and end April 2016

FSIS has analyzed the data collected from the first three months of the pilot project and the results indicate a positive trend in the rate of KIS test positive results for both the dairy cow and bob veal slaughter classes.

FSIS will update its stakeholders upon completion of the first phase.
The expected outcome is Agency modified/additional guidance on Inspector-generated testing. Because of change in guidance, FSIS anticipates more effective use of resources as PHVs will target their testing to maximize FSIS lab confirmed positive results. PHVs may see an increase in their effectiveness at identifying carcasses that are then removed from the food supply.
Acknowledgements

- Ms. Margaret O’Keefe
- Dr. Melissa Hammer
- Dr. Charles Williams
- Dr. Hans Allender
- Dr. Jim Rogers
- Dr. Phil Bronstein
- Dr. John Johnston
Questions?

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