



United States  
Department of  
Agriculture

Food Safety  
and Inspection  
Service

## Quarterly Progress Report on *Salmonella* and *Campylobacter* Testing of Selected Raw Meat and Poultry Products: Preliminary Results, October 2013 through December 2013

### Executive Summary

During the last quarter:

- There were 5,949 samples collected and analyzed for the PR/HACCP Verification program.
- There were only 4 total PR/HACCP samples collected for ground chicken because sampling of ground poultry was suspended at the start of the Not Ready To Eat (NRTE) Comminuted Poultry Sampling Project, except in category 3 establishments.
- From the previous quarter, the percentage of plants in Category 3:
  - No change for Young Chicken plants (4.5%; from 8 out of 175 plants to 8 out of 176 plants)
  - Decreased for Turkey plants (5.8% to 5.7%; from 2 out of 34 plants to 2 plants out of 35)
  - Decreased for Ground Beef plants (3.2% to 2.3%; from 10 out of 307 plants to 7 out of 306 plants)
  - Decreased for Ground Chicken plants (28.5% to 14.3%; 2 out of 7 plants to 1 out of 7 plants)
  - Remained the same for Ground Turkey plants (0%; 0 out of 22 plants)
- There were 2,855 samples co-analyzed for *Campylobacter*, with the following percent positive results:
  - Young Chicken – 7.7% (2144 samples analyzed)
  - Turkeys – 2.4% (711 samples analyzed)
- 81.9% of all establishments are in Category 1, while 3.3% are in Category 3. The remaining plants are in some version of Category 2.
- NRTE Comminuted Poultry Sampling Project Results for all finished products are:
  - *Salmonella* - 46.93% (1146 out of 2442 samples)
  - *Campylobacter* – 7.09% (173 out of 2439 samples)

This report discusses the *Salmonella* and *Campylobacter* verification sampling results for the fourth quarter CY2013 as presented in Tables 1-7, Chart 1, and Figures 1-7.<sup>1</sup> It also includes sampling results from the NRTE Comminuted Poultry Sampling Project as presented in Tables 8a and 8b.<sup>2</sup>

#### **Tables 1a and 1b**

Tables 1a and 1b describe the *Salmonella* performance standards/guidance for 5 product classes and allowed positives for category 1, 2T, 2 and 3.

#### **Tables 2a and 2b**

Table 2a summarizes *Salmonella* verification samples including *Salmonella* positive results, based on sample collection date, from October - December 2013 for all five product classes. Table 2b summarizes **quantitative (1 ml—regulatory)** *Campylobacter* verification samples including *Campylobacter* positive results, based on sample collection date, from October - December 2013 for young chicken and turkey carcasses.

#### **Tables 3-7**

Tables 3-7 report the proportion of establishments by categories that have completed at least two recent *Salmonella* verification-sampling sets. New establishments are not identified in any category until FSIS has documented the results from two sets. An establishment with its last set  $\leq$  50% of the performance standard or guidance and the prior set at  $>$  50% of the performance standard or guidance is sub-categorized as 2T, with T standing for transitioning to Category 1. Young chicken and young turkey set results are classified using the performance standards that were in place at the time the set was initiated. Table 5 (ground beef) continues to report only those establishments eligible for traditional PR/HACCP *Salmonella* verification sampling and that have completed two sets.

#### **Tables 8a and 8b**

Table 8a summarizes *Salmonella* positive results from June 2013 - December 2013 for the NRTE Comminuted Poultry Sampling Project. Table 8b summarizes *Campylobacter* positive results from June - December 2013 for young chicken and turkey comminuted products for the NRTE Comminuted Poultry Sampling Project.<sup>2</sup> Both tables also display the quartile distributions of percent positives among the sampled establishments for each type of product.

#### **MT43S**

A total of 1114 samples in the low volume ground beef sampling program (MT43S) were collected and analyzed from October - December 2013, and 15 samples (1.4%) were positive for *Salmonella*.

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<sup>1</sup> This data is presented in the format discussed in the *Salmonella* second quarterly report CY2008 which can be accessed on the FSIS website at [http://www.fsis.usda.gov/wps/portal/fsis/topics/data-collection-and-reports/microbiology/quarterly-reports-salmonella/q2-2008/ct\\_index](http://www.fsis.usda.gov/wps/portal/fsis/topics/data-collection-and-reports/microbiology/quarterly-reports-salmonella/q2-2008/ct_index).

<sup>2</sup>The NRTE Comminuted Poultry Sampling Project was initiated by Federal Register Notice FSIS–2012–0007: <http://www.fsis.usda.gov/OPPDE/rdad/FRPubs/2012-0007.pdf>.

**Chart 1**

This chart represents the total percentage of establishments within product classes classified by category and sub-category. This chart indicates that as of December 31, 2013, 81.8% of establishments are in Category 1, 8.7% are in Category 2T, 6.0% are in Category 2, and 3.2% are in Category 3.

**Figures 1-5**

Figures 1-5 summarize *Salmonella* positive results by product classes for the most recent five quarters.

**Figures 6-7**

Figures 6-7 summarize *Campylobacter* positive results by product classes for the most recent five quarters.

**NOTE:** While earlier quarterly reports included individual sample results from "A" sets only, the current report format summarizes data from all sets. This change was discussed in the 2006-second quarterly report, which can be accessed on the FSIS website: [http://www.fsis.usda.gov/wps/portal/fsis/topics/data-collection-and-reports/microbiology/quarterly-reports-salmonella/q2-cy-2006/ct\\_index](http://www.fsis.usda.gov/wps/portal/fsis/topics/data-collection-and-reports/microbiology/quarterly-reports-salmonella/q2-cy-2006/ct_index).

**Additional information regarding this report:**

In order to handle sample scheduling more efficiently and to update information on actively producing establishments, the Agency continues to automate the sampling algorithm process. Therefore, the total number of active operating establishments can change quarter to quarter as establishments exit or enter the industry. This change does not apply to intermittently producing establishments. The Agency will continue to categorize them because they are considered to be operating at some level.

Given the revised sampling strategy, the percentage of positive samples is no longer useful as an indicator of trends. As described above, FSIS has implemented placing establishments into Category 1, 2T, 2, or 3 as an alternative trend indicator for the *Salmonella* verification sampling program. While the Agency does not expect the category trend indicator to vary greatly on a quarterly basis, it should facilitate tracking of overall industry performance when examined over multiple years. Other trend indicators continue to be considered.

Beginning March 28, 2008, FSIS posted completed *Salmonella* sample set results from young chicken slaughter establishments with variable (Category 2) and highly variable (Category 3) process control. Currently only Category 3 young chicken slaughter establishments are posted on the FSIS website. In October through December 2013, there were 8 establishments in Category 3. FSIS continues to update this information on or about the 15th of each month. The current posting can be accessed at: <http://www.fsis.usda.gov/wps/portal/fsis/topics/data-collection-and-reports/microbiology/salmonella-verification-testing-program/salmonella-verification-testing-program>.

As announced in the January 2008 Federal Register Notice: *Salmonella* Verification Sampling Program: Response to Comments and New Agency Policies (<http://www.fsis.usda.gov/OPPDE/rdad/FRPubs/2006-0034.pdf>), turkey establishments in Category 2 and 3 were eligible for posting to the FSIS website beginning May 15, 2008. However, because > 90% of all turkey establishments eligible for *Salmonella* testing are in Category 1, and no establishments are in Category 3, turkey establishments are currently not being posted. The Agency is still considering publishing category results for establishments in additional product classes. Annual reports summarizing results for calendar years are available on the FSIS Web site as well as previous quarterly reports. The restructuring of *Salmonella* set scheduling, however, means that it is inappropriate to compare results from 2006 onwards to previous years. Similarly, the changes to the *Salmonella* verification-sampling program prevent valid comparisons of testing results over time (e.g., quarter-to-quarter or year-to-year trends).

**Table 1a: Salmonella Product classes, performance standards/guidance, and allowed positives for Category 1, 2T, 2 and 3.**

Product class	Performance standard (percent positive for <i>Salmonella</i> ) (%)	Number of samples tested	Maximum number of positives to achieve standard $\diamond$	Category 1 <sup>§</sup>	Category 2T (T for Transitioning) <sup>§</sup>	Category 2 <sup>§</sup>	Category 3 <sup>§</sup>
Young Chicken*	7.5	51	5	recent two set results $\leq 2$	last set $\leq 2$ prior set NOT $\leq 2$	Last set >2 w/o failing	last set $\geq 6$
Ground Beef <sup>Φ</sup>	7.5	53	5	most recent two set results set $\leq 2$	last set $\leq 2$ prior set NOT $\leq 2$	Last set >2 w/o failing	last set $\geq 6$
Ground Chicken	44.6	53	26	most recent two set results set $\leq 13$	last set $\leq 13$ prior set NOT $\leq 13$	Last set >13 w/o failing	last set $\geq 27$
Ground Turkey <sup>Φ</sup>	49.9	53	29	most recent two set results set $\leq 14$	last set $\leq 14$ prior set NOT $\leq 14$	Last set >14 w/o failing	Last set $\geq 30$
Turkey*	1.7	56	4	most recent two set results set $\leq 2$	last set $\leq 2$ prior set NOT $\leq 2$	Last set >2 w/o failing	last set $\geq 5$

$\diamond$ Maximum number of positives is set at the number which would provide 80% likelihood of an establishment passing the sample set, if it were operating at exactly the performance standard (e.g. there is an 80% chance that a young chicken plant that has *Salmonella* in exactly 7.5% of its product getting 5 or fewer positive samples out of a set of 51).

\*New performance standards for young chicken and turkey carcasses were implemented July 1, 2011

§Establishment category, which is based on the most recent two sets completed

ΦFSIS is now rounding down the allowable positives for Category 1 status for those product classes having odd numbered standards or guidelines. Therefore the current performance standards will be: Young Chicken (Category 1:  $\leq 2$  vs.  $\leq 3$  *Salmonella* positive results), Ground Beef (Category 1:  $\leq 2$  vs.  $\leq 3$  *Salmonella* positive results), and Ground Turkey (Category 1:  $\leq 14$  vs.  $\leq 15$  *Salmonella* positive results).

**Table 1b: *Campylobacter* Product classes, performance standards/guidance, and allowed positives for Category 1, 2T, 2 and 3.**

Product class	Performance standard (percent positive for <i>Campylobacter</i> ) (%)	Number of samples tested	Maximum number of positives to achieve standard	Category 1	Category 2T (letter T standing for transitioning)	Category 2	Category 3
Young Chicken	10.4	51	8	T.B.D.	T.B.D.	T.B.D.	T.B.D.
Turkey	0.79	56	3	T.B.D.	T.B.D.	T.B.D.	T.B.D.

Categories for *Campylobacter* To Be Determined (T.B.D.)

**Table 2a: Percent Positive *Salmonella* Tests (All Samples) in the PR/HACCP Verification Testing Program by Product Class and Establishment Size - Fourth Quarter CY2013 (October 1, 2013 through December 31, 2013).**

All Sets	Establishment Size											
	Large			Small			Very Small			All Sizes		
Product ID	Samples	Positive	Percent Positive	Samples	Positive	Percent Positive	Samples	Positive	Percent Positive	Samples	Positive	Percent Positive
Young Chicken	1345	14	1.0%	569	38	6.7%	230	39	17.0%	2144	91	4.2%
Ground Beef	483	19	3.9%	1878	37	2.0%	729	8	1.1%	3090	64	2.1%
Ground Chicken	0	0	0	4	2	50.0%	0	0	0	4	2	50.0%
Ground Turkey	0	0	0	0	0	0	0	0	0	0	0	0
Turkeys	447	4	0.9%	254	8	3.1%	10	1	10.0%	711	13	1.8%

**Table 2b: Percent Positive Quantitative (1 ml--regulatory) *Campylobacter* Tests (All Samples) in the PR/HACCP Verification Testing Program by Product Class and Establishment Size - Fourth Quarter CY2013 (October 1, 2013 through December 31, 2013).**

All Sets	Establishment Size											
	Large			Small			Very Small			All Sizes		
Product ID	Samples	Positive	Percent Positive	Samples	Positive	Percent Positive	Samples	Positive	Percent Positive	Samples	Positive	Percent Positive
Young Chicken	1345	17	1.3%	569	94	16.5%	230	55	23.9%	2144	166	7.7%
Turkeys	447	4	0.9%	254	13	5.1%	10	0	0.0%	711	17	2.4%

**Table 3: Young Chicken Establishments by Category, 4th Quarter CY2013**

Young Chicken Establishments, by Category, Quarter 4 CY2013								
Category	Quarter 1	Percent of TOTAL	Quarter 2	Percent of TOTAL	Quarter 3	Percent of TOTAL	Quarter 4	Percent of TOTAL
1	119	67.6%	122	70.1%	129	73.7%	131	74.4%
2T	18	10.2%	17	9.7%	25	14.2%	25	14.2%
2	24	13.6%	24	13.7%	13	7.4%	12	6.8%
3	15	8.5%	11	6.3%	8	4.5%	8	4.5%
TOTAL *	176	100.0%	174	100.0%	175	100.0%	176	100.0%

\*Total Number of Establishments Currently Operating And Subject To Sampling That Have At Least Two Completed Sets

**Table 4: Turkey Establishments by Category, 4th Quarter CY2013**

Turkey Establishments, by Category, Quarter 4 CY2013								
Category	Quarter 1	Percent of TOTAL	Quarter 2	Percent of TOTAL	Quarter 3	Percent of TOTAL	Quarter 4	Percent of TOTAL
1	28	82.3%	28	82.3%	28	82.3%	27	77.1%
2T	4	11.7%	5	14.7%	2	5.8%	3	8.6%
2	0	0	0	0	2	5.8%	3	8.6%
3	2	5.8%	1	2.9%	2	5.8%	2	5.7%
TOTAL *	34	100.0%	34	100.0%	34	100.0%	35	100.0%

\*Total Number Of Establishments Currently Operating And Subject To Sampling That Have At Least Two Completed Sets.

**Table 5: Ground Beef Establishments by Category, 4th Quarter CY2013**

Ground Beef Establishments, by Category, Quarter 4 CY2013								
Category	Quarter 1	Percent of TOTAL	Quarter 2	Percent of TOTAL	Quarter 3	Percent of TOTAL	Quarter 4	Percent of TOTAL
1	244	83.2%	262	86.1%	265	86.3%	264	86.3%
2T	23	7.8%	17	5.5%	21	6.8%	18	5.9%
2	23	7.8%	21	6.9%	11	3.5%	17	5.5%
3	3	1.0%	4	1.3%	10	3.2%	7	2.3%
TOTAL *	293	100.0%	304	100.0%	307	100.0%	306	100.0%

\*Total Number of Establishments Currently Operating and Subject to Sampling That Have At Least Two Completed Sets.

**Table 6: Ground Chicken Establishments by Category, 4th Quarter CY2013**

Ground Chicken Establishments, by Category, Quarter 4 CY2013								
Category	Quarter 1	Percent of TOTAL	Quarter 2	Percent of TOTAL	Quarter 3	Percent of TOTAL	Quarter 4	Percent of TOTAL
1	5	62.5%	5	62.5%	4	57.1%	5	71.4%
2T	1	12.5%	1	12.5%	1	14.2%	1	14.3%
2	0	0	0	0	0	0	0	0
3	2	25.0%	2	25.0%	2	28.5%	1	14.3%
TOTAL *	8	100.0%	8	100.0%	7	100.0%	7	100.0%

\*Total Number of Establishments Currently Operating And Subject To Sampling That Have At Least Two Completed Sets

**Table 7: Ground Turkey Establishments by Category, 4th Quarter CY2013**

Ground Turkey Establishments, by Category, Quarter 4 CY2013								
Category	Quarter 1	Percent of TOTAL	Quarter 2	Percent of TOTAL	Quarter 3	Percent of TOTAL	Quarter 4	Percent of TOTAL
1	20	90.9%	20	90.9%	20	90.9%	20	90.9%
2T	1	4.5%	1	4.5%	1	4.5%	1	4.5%
2	1	4.5%	1	4.5%	1	4.5%	1	4.5%
3	0	0	0	0	0	0	0	0
TOTAL *	22	100.0%	22	100.0%	22	100.0%	22	100.0%

\*Total Number Of Establishments Currently Operating And Subject To Sampling That Have At Least Two Completed Sets.

**Table 8a: Percent Positive *Salmonella* Tests (All Samples) in the NRTE Comminuted Poultry Sampling Project by reported Finished Product Category – All Samples (June 1, 2013 through December 30, 2013)\*\***

Product Group	Finished Product	Overall Samples			Establishment Data		Establishment Percent Positive Distribution		
		Number Analyzed	Number Positive	Percent Positive	Plants Sampled	Avg. Samples per Plant	Q1	Median	Q3
Chicken	A. Ground Chicken	691	292	42.26%	62	11.15	15.79%	34.17%	68.75%
	B. Mechanically Separated Chicken	697	578	82.93%	42	16.6	71.43%	92.67%	96.15%
	C. Other Comminuted Chicken	189	79	41.80%	24	7.88	20.10%	43.27%	70.83%
	Chicken Subtotal	1577	949	60.18%	101	15.61	21.05%	57.14%	90.48%
Turkey	D. Ground Turkey	660	141	21.36%	46	14.35	4.35%	20.00%	34.78%
	E. Mechanically Separated Turkey	66	30	45.45%	12	5.5	13.64%	36.93%	84.62%
	F. Other Comminuted Turkey	139	26	18.71%	22	6.32	0.00%	0.00%	33.33%
	Turkey Subtotal	865	197	22.77%	57	15.18	4.35%	16.67%	34.78%
<b>Salmonella Grand Total</b>		2442	1146	46.93%	143	17.08	15.38%	36.00%	80.00%

\*\*NOTE:

The finished product information is obtained here through inspection personnel responses on the sampling forms and is subject to further review by the Agency for future analyses.

**Table 8b: Percent Positive *Campylobacter* Tests (All Samples) in the NRTE Comminuted Poultry Sampling Project by reported Finished Product Category - All Samples (June 1, 2013 through December 31, 2013) \*\***

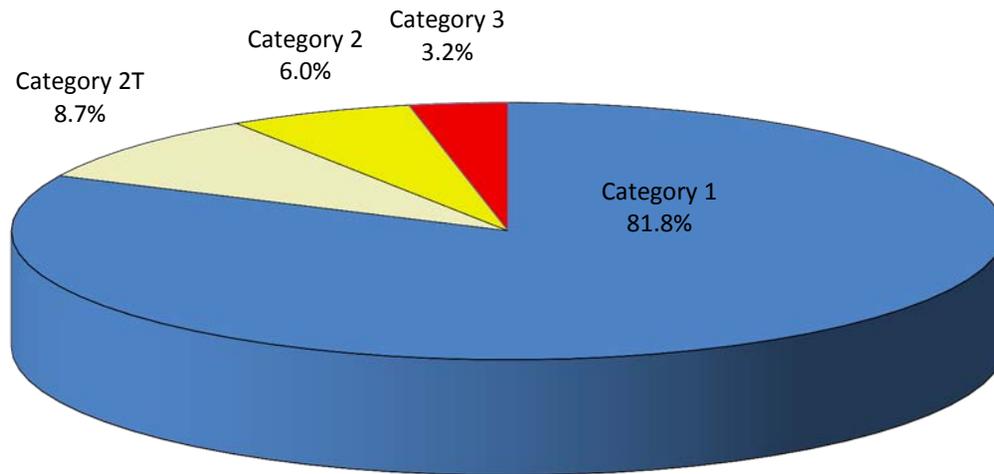
Product Group	Finished Product	Overall Samples			Establishment Data		Establishment Percent Positive Distribution		
		Number Analyzed	Number Positive	Percent Positive	Plants Sampled	Avg. Samples per Plant	Q1	Median	Q3
Chicken	A. Ground Chicken	689	18	2.61%	62	11.11	0.00%	0.00%	0.00%
	B. Mechanically Separated Chicken	696	144	20.69%	42	16.57	4.17%	14.56%	26.09%
	C. Other Comminuted Chicken	190	2	1.05%	25	7.6	0.00%	0.00%	0.00%
	Chicken Subtotal	1575	164	10.41%	101	15.59	0.00%	0.00%	11.54%
Turkey	D. Ground Turkey	659	6	0.91%	46	14.33	0.00%	0.00%	0.00%
	E. Mechanically Separated Turkey	66	3	4.55%	12	5.5	0.00%	0.00%	0.00%
	F. Other Comminuted Turkey	139	0	0.00%	22	6.32	0.00%	0.00%	0.00%
	Turkey Subtotal	864	9	1.04%	57	15.16	0.00%	0.00%	0.00%
<b><i>Campylobacter</i> Grand Total</b>		2439	173	7.09%	143	17.06	0.00%	0.00%	6.25%

\*\*NOTE:

The finished product information is obtained here through inspection personnel responses on the sampling forms and is subject to further review by the Agency for future analyses.

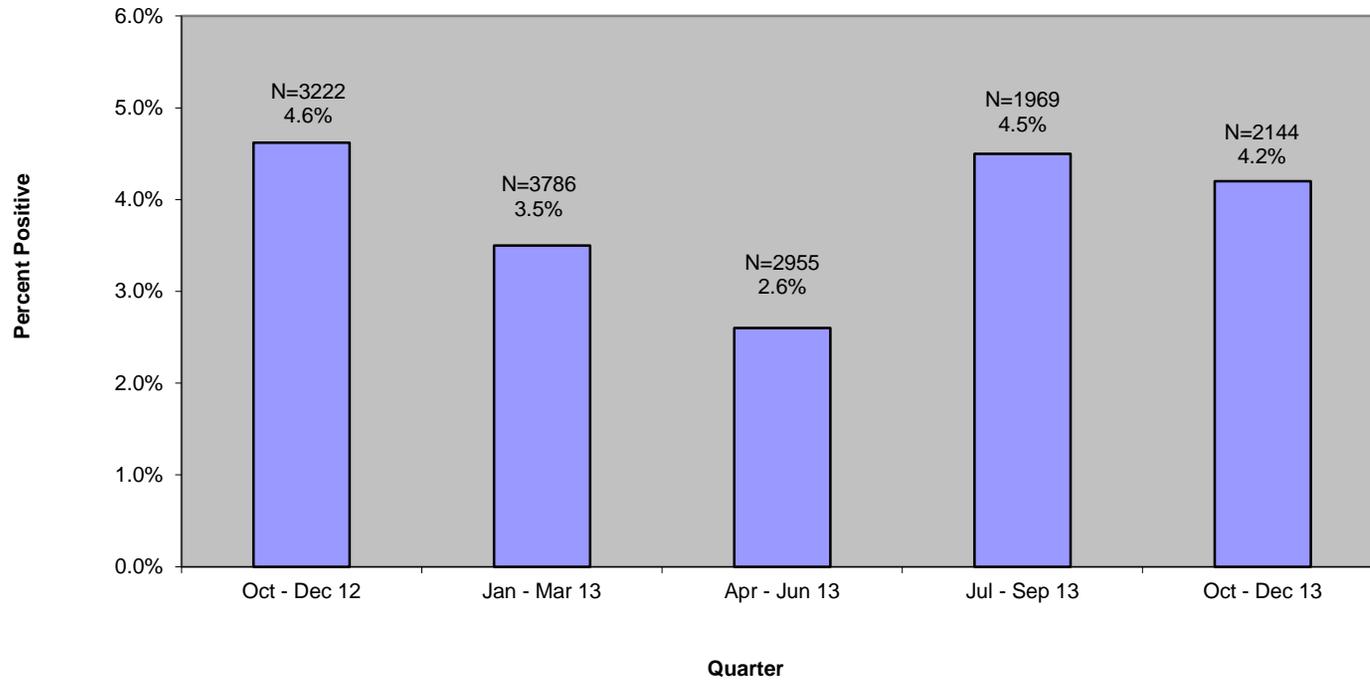
Data Source: FSIS Data Warehouse

**Chart 1: Establishment Categories for All Product Classes:  
October 2013 through December 2013**

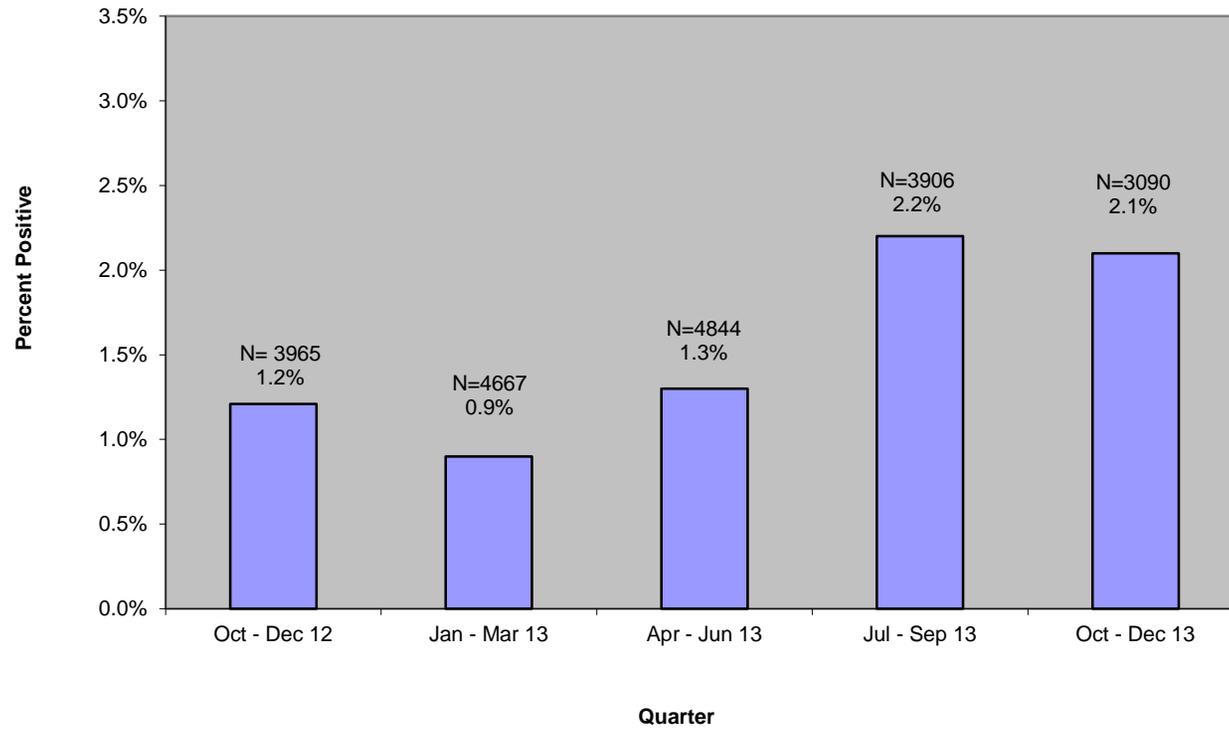


■ Cat-1    ■ Cat-2T    ■ Cat-2    ■ Cat-3

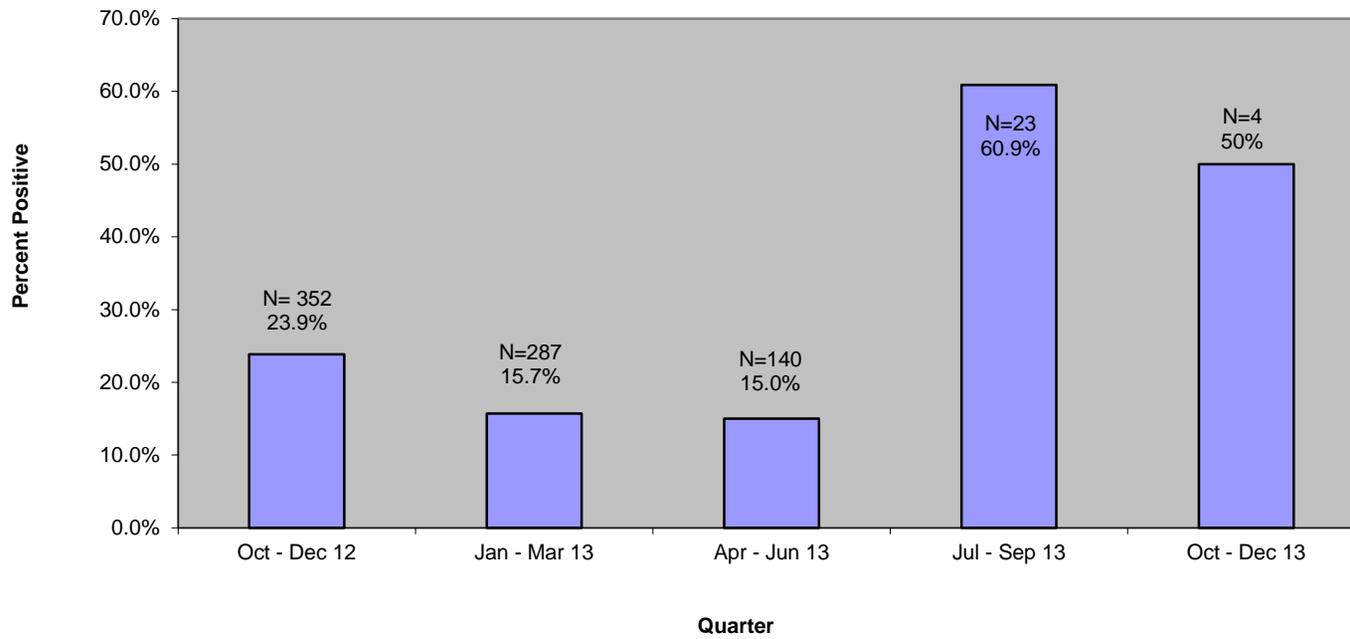
**Figure 1**  
**Microbiological Results of Young Chicken Carcasses (All Samples) Analyzed for Salmonella in the PR/HACCP**  
**Verification Testing Program Summarized**  
**by Quarter from October 2012 through December 2013**



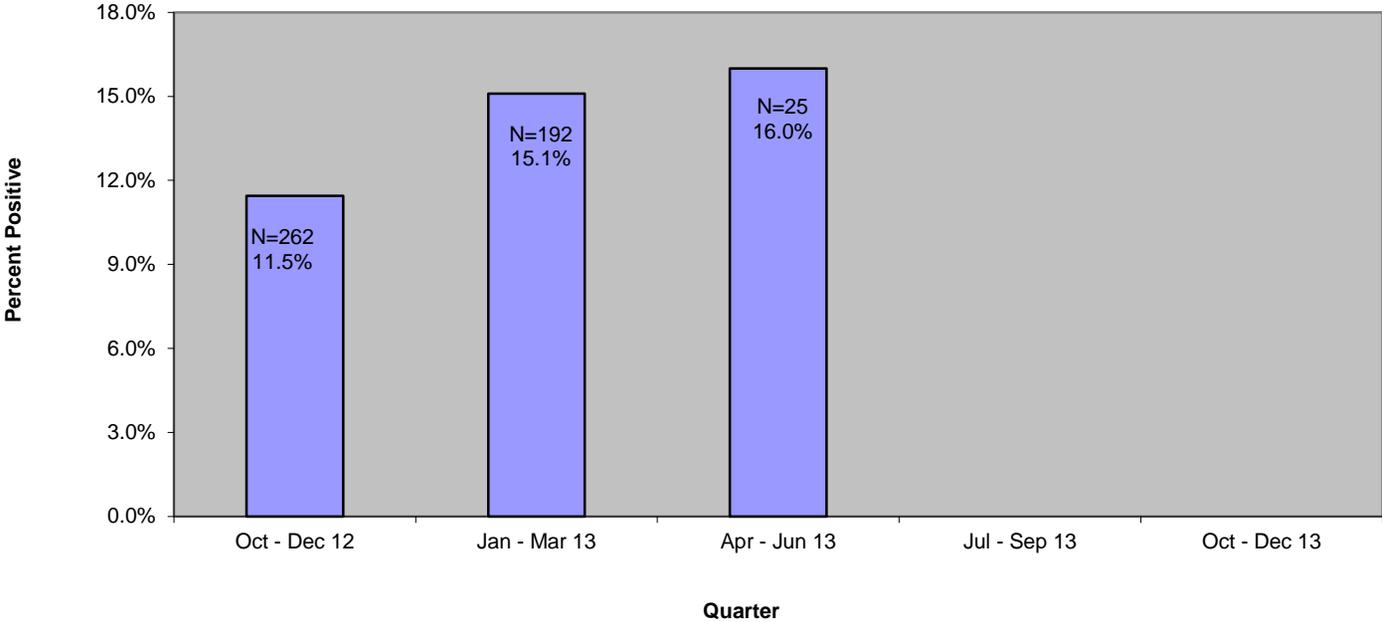
**Figure 2**  
**Microbiological Results of Ground Beef (All Samples) Analyzed for Salmonella in the PR/HACCP**  
**Verification Testing Program Summarized by Quarter**  
**from October 2012 through December 2013**



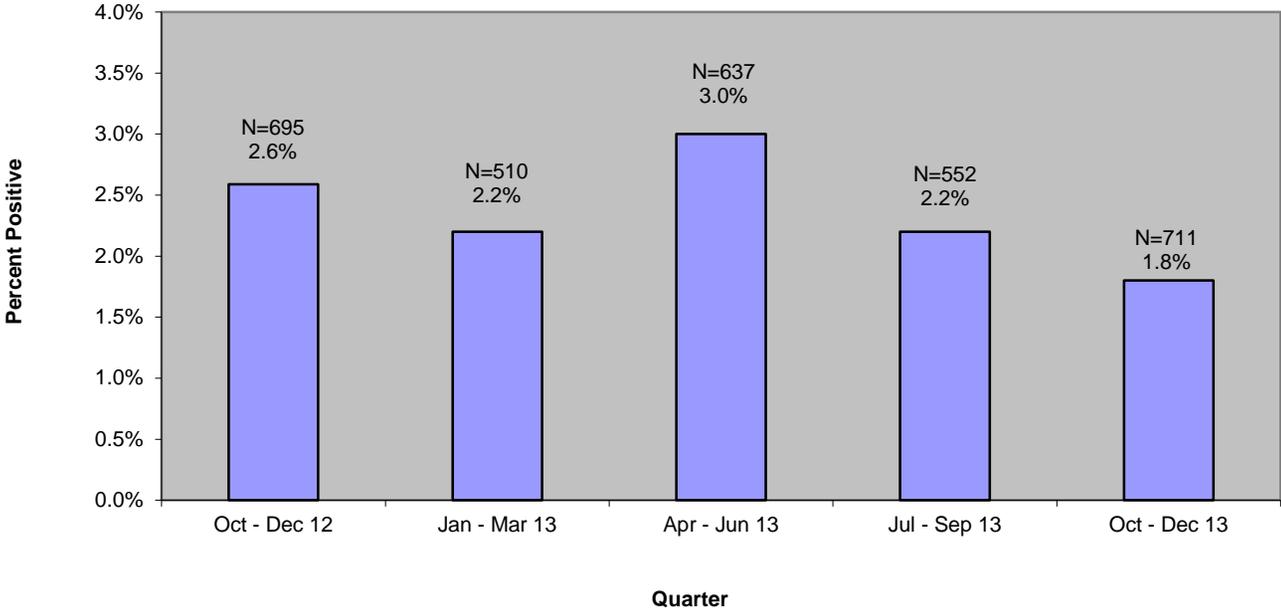
**Figure 3**  
**Microbiological Results of Ground Chicken (All Samples) Analyzed for Salmonella in the PR/HACCP**  
**Verification Testing Program Summarized by Quarter**  
**from October 2012 through December 2013**



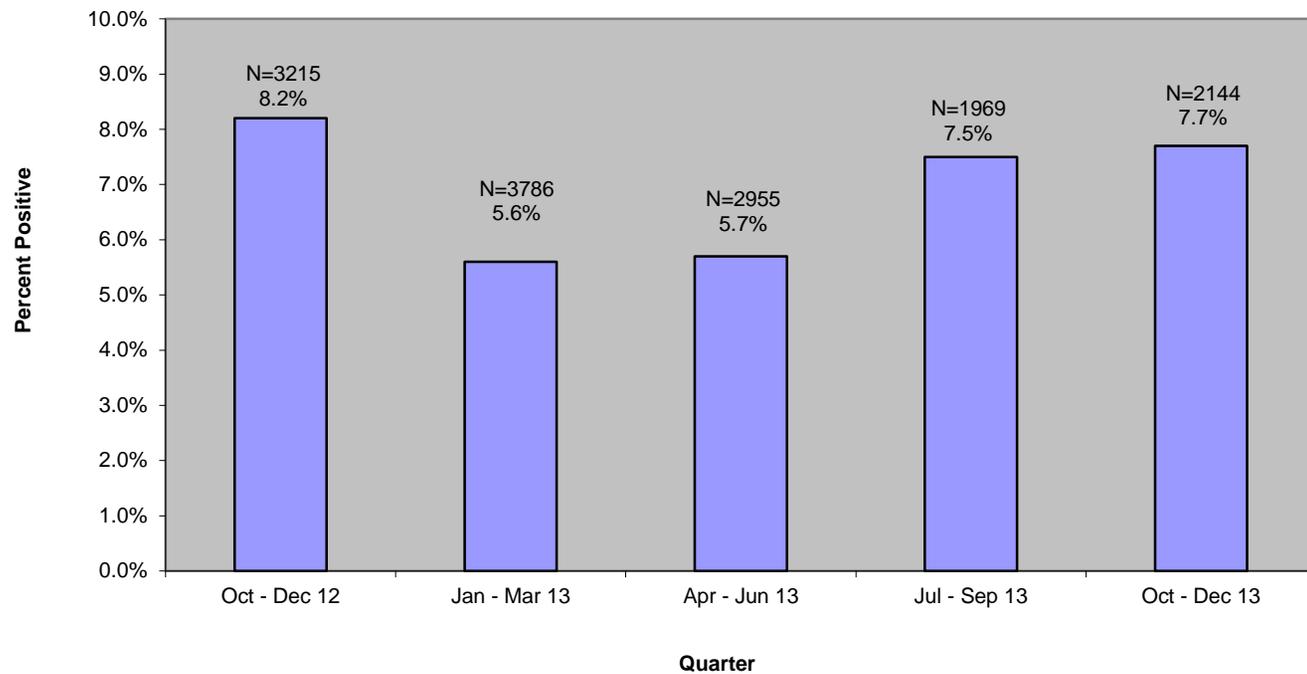
**Figure 4**  
**Microbiological Results of Ground Turkey (All Samples) Analyzed for Salmonella in the PR/HACCP Verification Testing Program Summarized by Quarter from October 2012 through December 2013**



**Figure 5**  
**Microbiological Results of Turkey (All Samples) Analyzed for Salmonella in the PR/HACCP Verification Testing Program Summarized by Quarter from October 2012 through December 2013**



**Figure 6**  
**Microbiological Results of Young Chicken Carcasses (All Samples) Analyzed for Campylobacter in the PR/HACCP Verification Testing Program Summarized by Quarter from October 2012 through December 2013**



**Figure 7**  
**Microbiological Results of Turkeys Carcasses (All Samples) Analyzed for Campylobacter in the PR/HACCP**  
**Verification Testing Program Summarized**  
**by Quarter from October 2012 through December 2013**

