United States National Residue Program
Residue Quarterly Report
2nd Quarter, FY 2014
(Jan-Mar, 2014)

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Introduction

Background

The USDA Food Safety and Inspection Service (FSIS) administers the United States National Residue Program (hereafter, NRP) for meat, poultry, and egg products, an interagency program designed to identify, rank, and test for chemical residues in meat, poultry, and egg products.

The NRP is designed to: (1) provide a structured process for identifying and evaluating chemical compounds of concern in food animals; (2) analyze chemical compounds of concern; (3) report results; and, (4) identify the need for regulatory follow-up subsequent to the identification of violative levels of chemical residues.

FSIS administers this regulatory program under the Federal Meat Inspection Act (FMIA) (21 U.S.C. 601 et seq.), the Poultry Products Inspection Act (PPIA) (21 U.S.C. 453 et seq.), and the Egg Products Inspection Act (EPIA) (21 U.S.C. 1031 et seq.). NRP is designed to protect the health and welfare of consumers by regulating the meat, poultry, and egg products produced in federally inspected establishments and to prevent the distribution in commerce of any such products that are adulterated or misbranded.

FSIS has administered the NRP by collecting meat, poultry, and egg product samples and analyzing the samples for specific chemical compounds at FSIS laboratories. The program has analyzed meat and poultry samples since 1967. The program began sampling egg products in 1995.

A violation occurs when an FSIS laboratory detects a chemical compound in excess of an established tolerance or action level. When a violation is established, FSIS informs the establishment via certified letter. Under best practices, the establishment should notify the producer that an animal from that business had a violative chemical level. FSIS also shares the violation data with the Environmental Protection Agency (EPA) and the Food and Drug Administration (FDA), which establish violative levels for chemical residues. The FDA has on-farm jurisdiction, and working with cooperating State agencies, FDA can investigate producers linked to residue violations and can enforce legal action if conditions leading to the residue violations are not corrected.

The NRP sampling plans focus on chemical residues in domestic meat, poultry, and egg products. The domestic sampling plan includes scheduled sampling (headquarters-directed) and inspector-generated (targeted) sampling. Scheduled sampling plans involve random tissue sampling from food animals that have passed ante-mortem inspection.

Under the current scheduled sampling program, FSIS tests 11 production classes (beef cows, bob veal calves, dairy cows, steers, heifers, goats, sheep, market hogs, sows, young chickens, and young turkeys) representing 96 percent of domestic meat and poultry consumption.

Inspector-generated sampling is conducted by the Office of Field Operation's in-plant personnel (IPP), overseen by the Public Health Veterinarians (PHVs). Currently, IPP inspector-generated sampling targets individual suspect animals, suspect populations of animals, and special sampling for bob veal calves per CFR 310.21 c and d.

When an inspector-generated sample is collected, the carcass is held pending the results of laboratory testing. If a carcass is found to contain violative levels of residues, FSIS condemns the carcass.

Under the import reinspection plan, imported meat, poultry, and egg products are sampled through the Port-of-Entry Reinspection Program. This program is a chemical residue-monitoring program conducted to verify the equivalence of inspection systems in exporting countries.

All imported products are subject to reinspection and one or more types of inspection (TOI). These procedures ensure that every lot of product is inspected before it enters the United States. Chemical residue sampling is included in the reinspection of imported products.

In addition to publishing chemical residue results on a timely manner, this quarterly report compliments the weekly residue violative tables from the Residue Repeat Violator Lists (http://www.fsis.usda.gov/wps/portal/fsis/topics/data-collection-and-reports/chemistry/residue-chemistry.

Note: Some tables provide results as the number of unique violative Carcasses, while other tables provide results as violative chemical. Multiple chemical residue violations in different tissues may be associated with the same Carcasses.

Note: For FY2014, FSIS is not testing egg products under the scheduled sampling program (Tier 1).

Purpose

This Quarterly Report summarizes chemical residue results for the United States National Residue Program (NRP) for meat, poultry, and egg products. The results in this report cover the domestic (Scheduled and Inspector-generated) and import sampling programs respectively.

Beginning August 2012, FSIS implemented several new multi-residue chemical methods for both the Scheduled and Inspector-generated programs and discontinued the use of testing production classes for single chemical or chemical classes ("pairing").

The new methods reflect the significant changes made to the NRP by the Agency. Individual samples are now analyzed for hundreds of chemicals. These changes are detailed in the July 6, 2012 Federal Register Notice (Federal Register Volume 77, Number 130, Pages 39895-39899).

Furthermore, FSIS has changed NRP reporting from a calendar year to a fiscal year reporting period to coincide with agency planning. This report contains data for the second quarter of fiscal year 2014: (**Jan-Mar 2014**), and its purpose is to provide chemical residue testing results on FSIS inspected meat, poultry, and egg products in a more timely manner, and to, increase program transparency for all stakeholders; The U.S. NRP residue data (Red Book) which FSIS will continue to publish on an annual basis as the final analysis of NRP.

The report is divided into tables and an appendix. The tables summarize the current quarter by month, whereas the appendix will include previous quarters' results as well for a quick comparison.

As this is an attempt to provide chemical residue data in a timelier fashion, comments are welcome. Please submit your comment to Naser Abdelmajid at Naser.abdelmajid@fsis.usda.gov

Note: Results based on sample collection date
Data Source: FSIS Data Warehouse (DW)/ Public Health Information System (PHIS) **as of 05/20/2014**

Table 1[1]: NRP Domestic Scheduled Sampling Program Results by Month, Jan-Mar 2014

During the second quarter of FY 2014, **1,518** samples were collected from beef cows, bob veal calves, dairy cows, steers, heifers, goats, sheep, market hogs, sows, young chickens, and young turkeys. Tissues analyzed include muscle, kidney, and liver. The program identified one chemical residue at violative level.

Sample Collection Month	Number of Samples / (FSIS Lab Chemical Analytes)	Number of Violative Carcasses/Number of Lab Confirmed Violative Samples	Violative Chemical Residues
Jan	486 / **(46,546)**	**N/A**	**N/A**
Feb	470 / **(37,448)**	**1 / (1)** Bob veal	**Oxytetracycline**
Mar	562 / **(52.255)**	**N/A**	**N/A**
Total	**1,518 / (136,249)**	**1/ (1)**	

[1] In the above table, column 2 lists the number of carcass samples tested, and in **parenthesis**, the number of analysis completed for these carcasses. Column 3 lists the number of samples tested and, in **parentheses**, the number of violative residues found in these samples. Column 4 lists the specific violative residues and, in parentheses, the number of violations for that residue. **Source: FSIS DW/PHIS as of 05/20/2014**

Table2 [2]: NRP Domestic Inspector-Generated (In-plant) Screening Program (KIS™ Test)
By Month, Carcass Class – Jan-Mar 2014

Carcass Class	Jan	Feb	Mar	Total
Beef Cows	1,872 **(51)**	1,585 **(51)**	1,740 **(43)**	**5,197** **(145)**
Boars/Stags	19 **(0)**	10 **(0)**	17 **(0)**	**46** **(0)**
Bob Veal	2,692 **(65)**	2,016 **(69)**	2,356 **(96)**	**7,064** **(230)**
Bulls	156 **(6)**	203 **(8)**	195 **(3)**	**554** **(17)**
Dairy Cows	9,378 **(214)**	8,022 **(210)**	8,664 **(269)**	**26,064** **(693)**
Formula Fed Veal	48 **(1)**	58 **(2)**	48 **(1)**	**154** **(4)**
Goats	27 **(1)**	27 **(0)**	50 **(0)**	**104** **(1)**
Heavy Calves	161 **(13)**	139 **(9)**	109 **(37)**	**409** **(37)**

[2] In the above table, columns 2-4 list the number of in-plant screened samples screened at the establishments by month, and in **parentheses,** the number of these screens that were found positive at the establishments, and sent to FSIS labs for confirmations.

Source : FSIS DW/PHIS as of 05/20/2014

Continued **Table 2: NRP Domestic Inspector-Generated (in-plant) Screening Program (KIS™ Test) By Month, Carcass Class – Jan-Mar 2014**

Carcass Class	Jan	Feb	Mar	Total
Heifers	308 **(8)**	300 **(2)**	293 **(13)**	**901** **(23)**
Lambs	49 **(0)**	43 **(0)**	47 **(0)**	**139** **(0)**
Market Hogs	1,211 **(4)**	1,171 **(4)**	1,259 **(8)**	**3,641** **(16)**
Mature Sheep	14 **(0)**	11 **(0)**	28 **(0)**	**53** **(0)**
Non Formula Fed Veal	9 **(0)**	16 **(0)**	20 **(1)**	**45** **(1)**
Roaster Pigs	140 **(1)**	97 **(0)**	97 **(0)**	**334** **(1)**
Sows	1,034 **(10)**	886 **(17)**	963 **(15)**	**2,883** **(42)**
Steers	901 **(19)**	816 **(13)**	864 **(19)**	**2,581** **(51)**
TOTAL	**18,019** **(393)**	**15,400** **(385)**	**16,750** **(483)**	**50.169** **(1,261)**

Table 3 [3]: NRP Domestic Inspector-Generated (In-plant) Screening Program (KIS™ Test). Results by Month, Jan-Mar 2014

1,253 positive values were identified from over 50,000 in-plant tests. Of these positive samples, 390 were lab-confirmed violations. Several of the violative tissue samples were associated with the same sample.

Sample Collection Month	Number of In-plant Screen Tests	Number of Positive In-plant Screens sent to labs	Number of Positive In-plant Screens Tested in FSIS labs / (FSIS Lab Chemical Analytes)	Number of Carcasses with Violative Samples	Number of Lab-confirmed Violative Samples	Three Most commonly reported chemical violations / (Number of Violative Samples per three most reported violations)	Total Number of violative chemical Residues
Jan	18,019	393	383 / (**25,398**)	102	**127**	Desfuroylceftiofur **(34),** Penicillin(**30),** Neomycin **(13)**	**17**
Feb	15,400	385	379 / (**25,202**)	107	**128**	Desfuroylceftiofur **(35),** Penicillin (**23),** Neomycin **(18)**	**15**
Mar	16,750	483	474 / (**31,646**)	112	**135**	Desfuroylceftiofur **(36),** Penicillin **(28),** Neomycin **(17)**	**17**
Total	**50,169**	**1,261**	**1,236** / (**82,246**)	**321**	**390**	Desfuroylceftiofur **(105),** Penicillin **(81),** Neomycin **(48)**	**20**

[3] In the above table, Column 2 lists the number of in-plant screens; Column 3 lists the number of these screens that were found positive at the establishments and sent to FSIS labs. **Note: Not all samples received met laboratory system requirements for analysis**. Column 4 lists the number of these screens that were found positive at the establishments and tested in FSIS labs, and in **parentheses**, the number of analyses completed for these screens. Column 5 lists the number of carcasses that had violations, and column 6 lists the number of violative samples confirmed from those violative carcasses. Column 7 shows the three most commonly reported violative chemical residues and, in parentheses, the number of violations found for each. The last column show **unique** numbers of violative chemical residue**. Source: FSIS DW/PHIS as of 05/20/2014**

Table 4 [4]: Distribution of NRP Residue Violations Inspector-Generated (in-plant) Screening Program (KIS™ Test). Results by Carcass Class and Month, Jan-Mar 2014

Violations reported for inspector-generated samples by production class. Samples include in-plant screened samples (KIS™ Test). The number of laboratory confirmed violations appear in **parentheses**. Results include multiple violative tissues associated with the same sample.

Carcass Class	Jan	Feb	Mar	Total
Beef Cows	6 (11)	13 (17)	9 (12)	**28** **(40)**
Boars/Stags	--	--	--	--
Bob Veal	23 (29)	28 (31)	33 (41)	**84** **(101)**
Bulls	2 (3)	1 (1)	2 (2)	**5** **(6)**
Dairy Cows	58 (69)	52 (61)	53 (62)	**163** **(192)**
Formula Fed Veal	--	--	--	--
Goats	--	--	--	--
Heavy Calves	1 (1)	2 (4)	1 (1)	**4** **(6)**

[4] **Source: FSIS DW/PHIS as of 05/20/2014**

Continued **Table 4: Distribution of NRP Residue Violations Inspector-Generated (in-plant) Screening Program (KIS™ Test). Results by Carcass Class and Month, Jan-Dec 2014**

Violations reported for inspector-generated samples by production class. Samples include in-plant screened samples (KIS™ Test). The number of laboratory confirmed violations appear in **parentheses**. Results include multiple violative tissues associated with the same sample.

Carcass Class	Jan	Feb	Mar	Total
Heifers	3 (3)	1 (1)	3 (3)	**7** **(7)**
Lambs	--	--	--	--
Market Hogs	--	1 (1)	1 (1)	**2** **(2)**
Mature Sheep	--	--	--	--
Non Formula Fed Veal	--	--	1 (1)	1 (1)
Roaster Pigs	--	--	--	--
Sows	6 (8)	7 (9)	4 (4)	**17** **(21)**
Steers	3 (3)	2 (3)	5 (8)	**10** **(14)**
TOTAL	**102** **(127)**	**107** **(128)**	**112** **(135)**	**321** **(390)**

Table 5 [5]: Distribution of NRP Residue Violations Inspector-Generated (In-plant) Screening Program (KIS™ Test). Results by Carcass Class, and Chemical Residue, Jan-Mar 2014

Violations reported for inspector-generated sampling for each production by specific chemical residue. The results include in-plant screened samples (KIS™ Test) sent to lab. Results include multiple violative tissues samples associated with the same Carcass.

Compound / (Number of violative Carcass classes)	Beef Cows	Bob Veal	Bulls	Dairy Cows	Heavy Calves	Heifers	Market Hogs	Non Formula Fed Veal	Sows	Steers	Total
Ampicillin / (1)	-	-	-	3	-	-	-	-	-	-	**3**
Cefazolin / (2)	1	-	-	3	-	-	-	-	-	-	**4**
Ciprofloxacin / (2)	1	2	-	2	-	-	-	-	-	-	**5**
Desfuroylceftiofur / (6)	7	10	2	82	-	1	-	-	-	3	**105**
Dihydrostreptomycin / (2)	-	1	-	2	-	-	-	-	-	-	**3**
Enrofloxacin / (1)	-	2	-	-	-	-	-	-	-	-	**2**
Florfenicol / (5)	5	2	-	3	1	-	-	-	-	1	**12**
Flunixin / (7)	3	2	-	19	1	1	-	-	1	1	**28**
Gentamycin Sulfate / (5)	1	-	-	4	1	2	-	-	1	-	**9**
Lincomycin / (1)	-	1	-	-	-	-	-	-	-	-	**1**
Neomycin / (2)	-	46	-	2	-	-	-	-	-	-	**48**
Oxytetracycline / (2)	1	3	-	-	-	-	-	-	-	-	**4**

Note: Three most commonly reported chemical violations is highlighted in Yellow

[5] A total of **390** violative samples were found in **321** samples/carcasses.
Source: FSIS DW/PHIS as of 05/20/2014

Continued **Table 5: Distribution of NRP Residue Violations Inspector-Generated (In-plant) Screening Program (KIS™ Test). Results by Carcass Class and Chemical Residue, Jan-Mar 2014**

Violations reported for inspector-generated sampling for each production by specific chemical residue. The results include in-plant screened positive samples (KIS™ Test) tested in FSIS labs. Results include multiple violative tissues samples associated with the same Carcass.

Compound / (Number of violative Carcass classes)	**Beef Cows**	**Bob Veal**	**Bulls**	**Dairy Cows**	**Heavy Calves**	**Heifers**	**Market Hogs**	**Non Formula Fed Veal**	**Sows**	**Steers**	**Total**
Penicillin **/ (7)**	7	5	3	44	-	-	2	1	19	-	**81**
Sulfadimethoxine **/(5)**	-	3	-	10	1	1	-	-	-	2	**17**
Sulfadoxine **/ (1)**	-	-	-	1	-	-	-	-	-	-	**1**
Sulfamethazine **/ (3)**	10	5	-	10	-	-	-	-	-	7	**32**
Sulfamethoxazole / (**1**)	-	8	-	-	-	-	-	-	-	-	**8**
Tetracycline **/ (1)**	-	-	-	3	-	-	-	-	-	-	**3**
Tilmicosin **/ (6)**	4	5	1	4	2	2	-	-	-	-	**18**
Tulathromycin **/ (1)**	-	6	-	-	-	-	-	-	-	-	**6**
Total	**40**	**101**	**6**	**192**	**6**	**7**	**2**	**1**	**21**	**14**	**390**

Table 6 [6]: NRP Import Samples Analyzed by Country, Jan-Mar 2014

Samples analyzed by ranked total numbers of samples submitted by foreign countries under the import reinspection program. 'Other' includes the following list of additional countries eligible to export meat and egg product to the United States: Brazil, Chile, Denmark, Finland, Germany, Hungary, Netherlands, New Zealand, Nicaragua, Northern Ireland, Poland, Spain, United Kingdom, and Uruguay.

Country	Jan	Feb	Mar	Total
Canada	48	66	75	**189**
Israel	8	7	46	**61**
Mexico	20	13	17	**50**
Australia	15	6	19	**40**
Japan	9	6	14	**29**
Italy	4	12	6	**22**
Other**	36	42	45	**123**
Total	**140**	**152**	**222**	**514**

Table 7 [7]: NRP Import Samples Analyzed by Species, Jan-Mar 2014

The number of samples analyzed under the import reinspection program by production class. The 'Other' category may include lamb, veal, mutton, goat. **Note: Multiple import residue results may be associated with the same sample**

Species	Jan	Feb	Mar	Total
Beef	146	125	205	**476**
Chicken	50	89	38	**177**
Pork	111	145	117	**373**
Turkey	30	46	66	**142**
Other*	43	27	111	**181**
Total	**380**	**432**	**537**	**1,349**

[6] **Source FSIS Import Sampling Program**
[7] **Source FSIS Import Sampling Program**

Table 8 [8]: NRP Import Samples Analyzed by Chemical Residue, Jan-Mar 2014
The number of samples collected during the import reinspection program tested for different chemical residues.
Note: Multiple import residue results may be associated with the same sample.

Chemical Residue	Jan	Feb	Mar	Total
Arsenic	49	47	64	**160**
Avermectins	42	35	51	**128**
Beta Agonists	53	67	70	**190**
Cadmium	2	2	2	**6**
Fluoroquinolones	53	68	71	**192**
Hormones	53	68	71	**192**
Ivermectin	1	-	3	**4**
Lead	3	-	2	**5**
Manganese	12	9	21	**42**
Molybdenum	7	3	4	**14**
Pesticides	33	42	48	**123**
Selenium	2	-	3	**5**
Strontium	-	1	-	**1**
Sulfas	65	82	101	**248**
Trace Elements	5	8	26	**39**
Total	**380**	**432**	**537**	**1,349**

[8] **Source –FSIS Import Sampling Program**

Table 9 [9]: NRP Import Samples Analyzed by Species and Chemical Residue Jan-Mar 2014
Number of import reinspection program arranged by product class tested for chemical residues. The 'Other' category may include lamb, veal, mutton, goat, and turkey. Note: Multiple import residue results may be associated with the same sample.

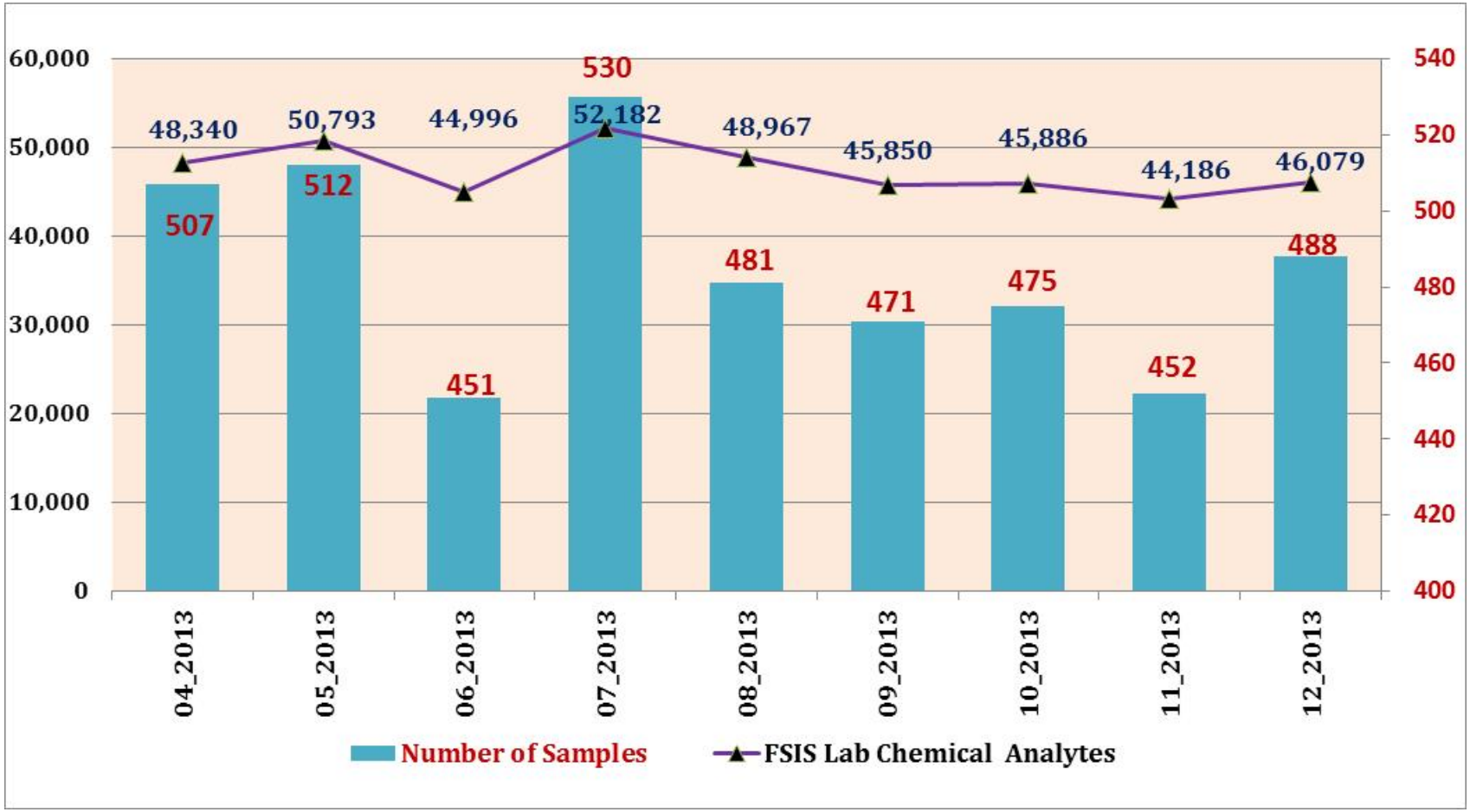
Chemical Residue	Beef	Chicken	Pork	Turkey	Other	Total
Arsenic	53	21	48	19	19	**160**
Avermectins	50	7	48	4	19	**128**
Beta Agonists	74	26	44	18	28	**190**
Cadmium	1	4	1	-	-	**6**
Fluoroquinolones	76	26	44	18	28	**192**
Hormones	76	26	44	18	28	**192**
Ivermectin	3	-	1	-	-	**4**
Lead	2	1	2	-	-	**5**
Manganese	8	11	16	7	-	**42**
Molybdenum	1	11	2	-	-	**14**
Pesticides	42	15	31	9	26	**123**
Selenium	2	-	3	-	-	**5**
Strontium	1	-	-	-	-	**1**
Sulfas	83	26	75	36	28	**248**
Trace Elements	4	3	14	13	5	**39**
Total	**476**	**177**	**373**	**142**	**181**	**1,349**

[9] **Source FSIS Import Sampling Program**

Appendix

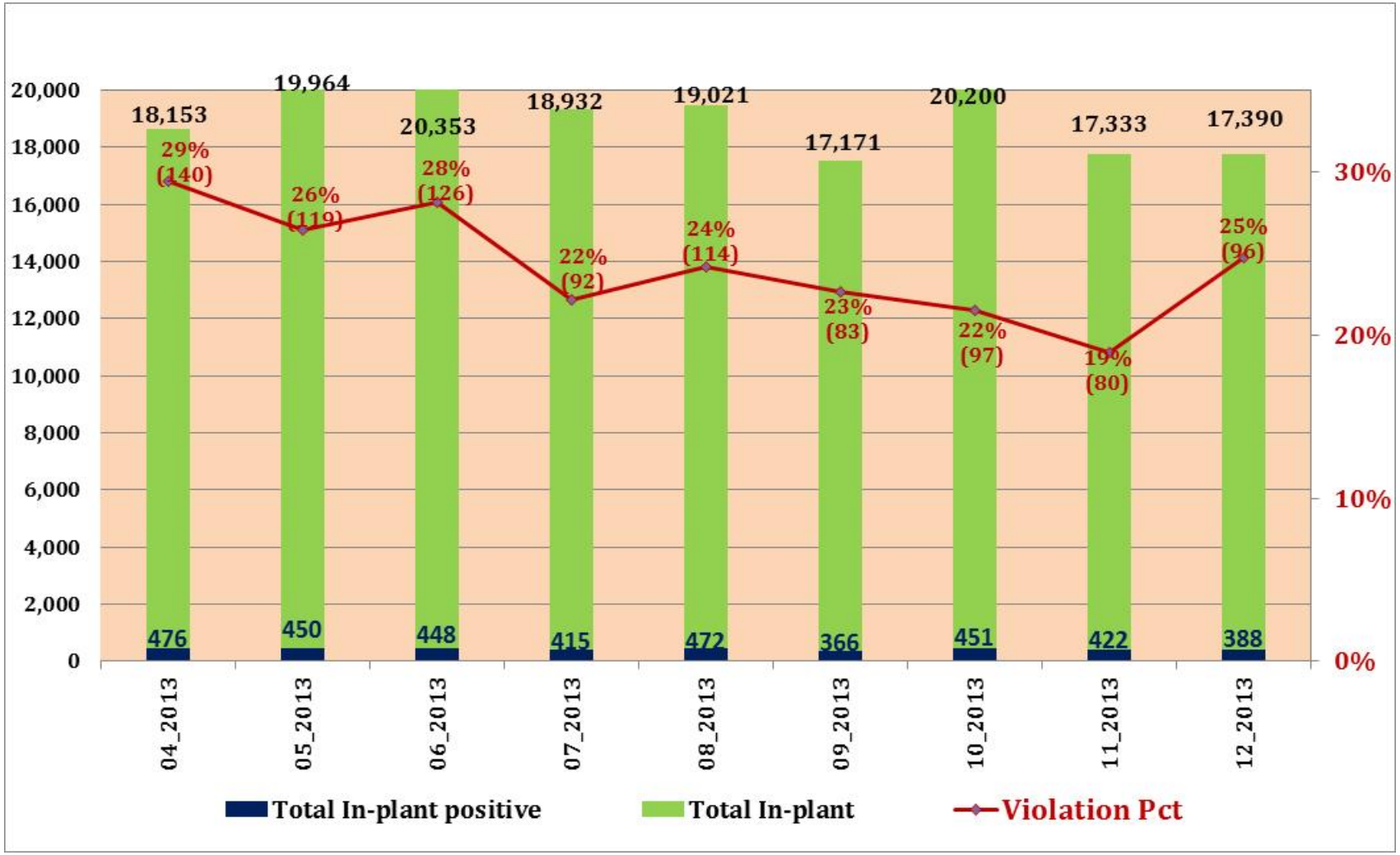
Summary of NRP Domestic Sample Data (Scheduled and Inspector-Generated) From Apr 2013 to Dec 2013

Figure A: [10] Distribution of NRP Domestic Scheduled samples by Month, Including FSIS lab chemical analytes By Month, Apr 2013- Dec 2013



[10] Number of residue domestic scheduled sample in **RED**

Figure B [11]: Distribution of NRP Inspector Generated (In-plant) Screenings (KIS™ Test) & Residue Violative Carcasses Rate By Month, Apr 2013- Dec 2013



[11] **Violation Percent and Number of violative carcasses** in **(parenthesis).**
Violation percent : **Ratio of (Violative carcasses samples) to (Total in-plant positive tested in the labs)**

Table 10: Distribution of NRP Inspector Generated Program (In-plant) Screenings (KIS™ Test)-Residue Violative Samples, Apr 2013- Dec 2013. Note: Multiple violations may be associated with one Carcass.

Residue Name	Apr 2013	May 2013	June 2013	July 2013	Aug 2013	Sep 2013	Oct 2013	Nov 2013	Dec 2013	Total
Amikacin	-	-	-	-	-	-	-	-	2	**2**
Ampicillin	3	-	-	3	2	1	1	1	-	**11**
Cefazolin	1	-	-	-	2	-	-	2	-	**5**
Ciprofloxacin	2	-	1	1	-	2	1	-	2	**9**
Desfuroylceftiofur	44	27	34	32	45	34	34	28	33	**311**
Dihydrostreptomycin	2	2	4	1	4	-	2	2	1	**18**
Doramectin	-	-	-	1	-	-	-	-	-	**1**
Enrofloxacin	1	-	-	1	-	1	-	-	-	**3**
Florfenicol	6	6	-	3	5	4	2	-	9	**35**
Flunixin	11	9	13	5	4	6	17	5	11	**81**
Gamithromycin	2	-	-	-	-	-	1	-	-	**3**
Gentamycin Sulfate	1	4	5	2	1	3	4	2	-	**22**
Lincomycin	-	-	-	1	-	-	1	-	-	**2**
Neomycin	19	27	37	16	12	8	11	8	17	**155**

Continued **Table 10: Distribution of NRP Inspector Generated Program (In-plant) Screenings (KIS™ Test) - Residue Violative Samples - Apr 2013- Dec 2013. Note: Multiple violations may be associated with one Carcass.**

Residue Name	Apr 2013	May 2013	June 2013	July 2013	Aug 2013	Sep 2013	Oct 2013	Nov 2013	Dec 2013	Total
Oxyphenylbutazone	-	-	-	-	1	-	-	-	-	**1**
Oxytetracycline	2	-	-	2	-	1	-	2	4	**11**
Penicillin	40	39	29	23	36	23	23	24	19	**256**
Phenylbutazone	-	-	-	1	-	-	-	-	-	**1**
Salbutamol	-	-	-	-	-	1	-	-	-	**1**
Sulfadiazine	1	1	-	-	-	-	-	-	1	**3**
Sulfadimethoxine	10	11	3	5	5	4	12	3	5	**58**
Sulfadoxine	1	-	-	-	1	-	-	-	-	**2**
Sulfamethazine	8	6	15	7	2	2	8	7	11	**66**
Sulfamethoxazole	3	1	1	2	-	1	1	2	-	**11**
Tetracycline	1	2	-	2	1	2	-	3	1	**12**
Tilmicosin	10	3	11	1	5	5	3	5	6	**49**
Tulathromycin	4	1	-	1	1	-	2	1	-	**10**
Zeralanol	-	-	-	-	-	2	-	-	-	**2**
Total	**172**	**139**	**153**	**110**	**127**	**100**	**123**	**95**	**122**	**1,141**