



United States  
Department of  
Agriculture



# Food Safety and Inspection Service

Protecting Public Health and Preventing Foodborne Illness



# Food Safety and Inspection Service



## Update on the National Residue Program

**Kis Robertson Hale**  
**CAPT, US Public Health Service**  
**Deputy Assistant Administrator, Office Public Health Science**  
**Food Safety and Inspection Service**

USAHA Meeting  
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# Food Safety and Inspection Service: **Mission in Action**



We are the public health agency in the USDA responsible for ensuring that meat, poultry, and processed egg products are safe, wholesome, and accurately labeled.

## Our Authority

Through a series of Acts, Congress empowers FSIS to inspect all meat, poultry, and processed egg products in interstate commerce.

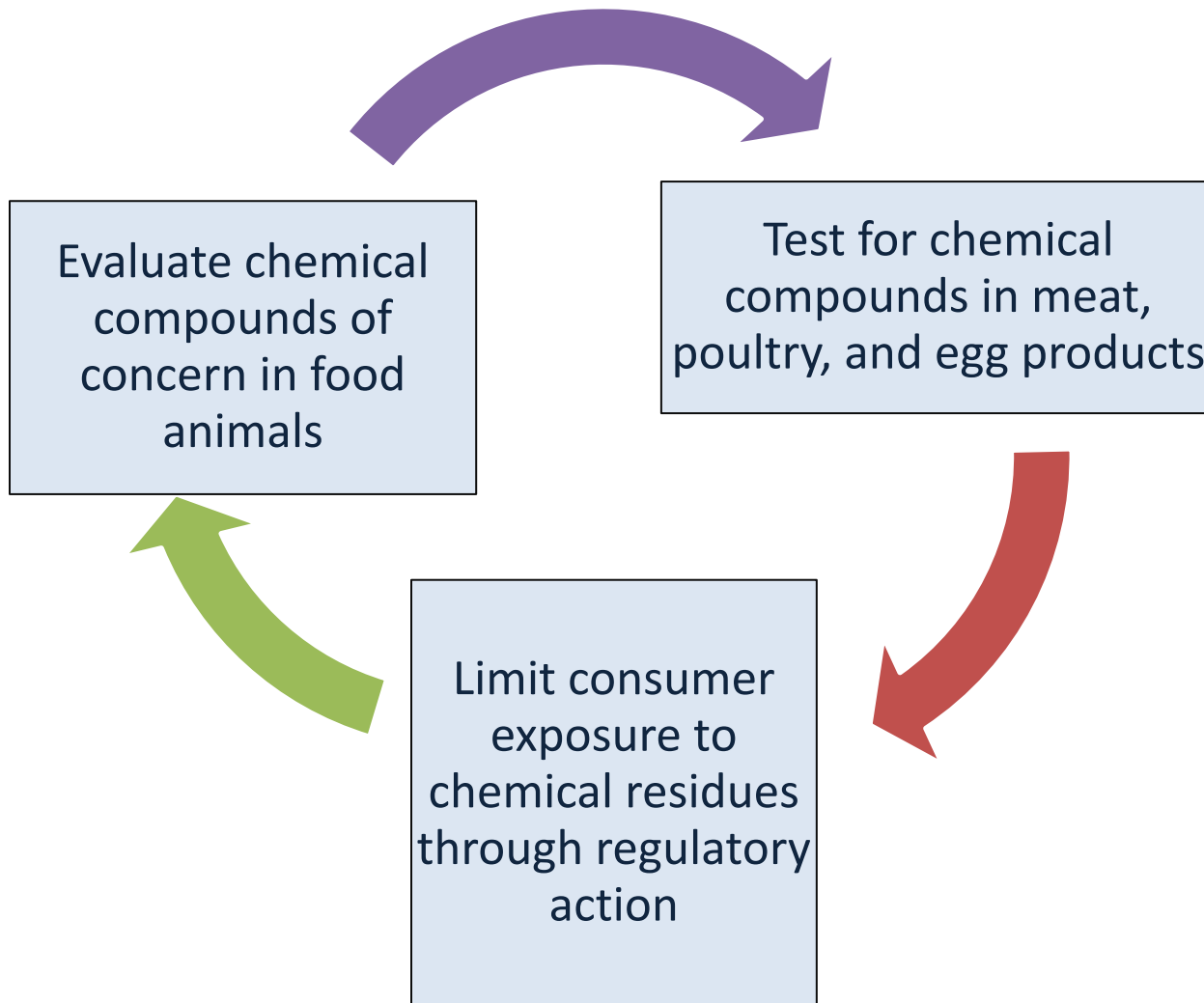
- Federal Meat Inspection Act (FMIA), 1906
- Agricultural Marketing Act (AMA), 1946
- Poultry Products Inspection Act (PPIA), 1957
- Humane Methods of Slaughter Act (HMSA), 1958
- Egg Products Inspection Act (EPIA), 1970

# Food Safety and Inspection Service: **National Residue Program (NRP)**

- Established in 1967
- Designed to identify, rank, and analyze chemical contaminants in meat, poultry, and egg products
  - Animal drugs
  - Pesticides
  - Environmental contaminants
- Administered by FSIS in collaboration with FDA and EPA



# Food Safety and Inspection Service: **NRP Objectives**



## Food Safety and Inspection Service: **Residue Sampling Plans**

- Domestic scheduled sampling
- Inspector-generated sampling
- Import sampling

## Food Safety and Inspection Service: **Domestic Scheduled Sampling**

- FSIS inspectors routinely sample carcasses at federal slaughter establishments
- Sampling frequency for each animal class set annually
- Carcasses are held pending results (except poultry)
- Multiple chemical tests performed on each sample



## Food Safety and Inspection Service:

# Inspector-Generated Sampling

- FSIS inspectors can also sample carcasses when they find indications of violative drug use
- These indications can be found during antemortem or postmortem inspection, and include evidence of:
  - Acute or subacute disease conditions (e.g. mastitis)
  - Injection sites
  - Recent surgery
  - Beta-agonist use (e.g., heavy muscle development)
  - Signs of recent treatment
- Other indications: herd history, production practices, environmental exposures, and threats to homeland security

Food Safety and Inspection Service:

## Inspector-Generated Sampling (cont.)

- Carcasses selected for sampling are first screened using the Kidney Inhibiting Swab (KIS™) test
- Screen positive samples are sent to laboratory for confirmation
- Carcasses are held pending results
- Violative results subject to same actions as routine sampling

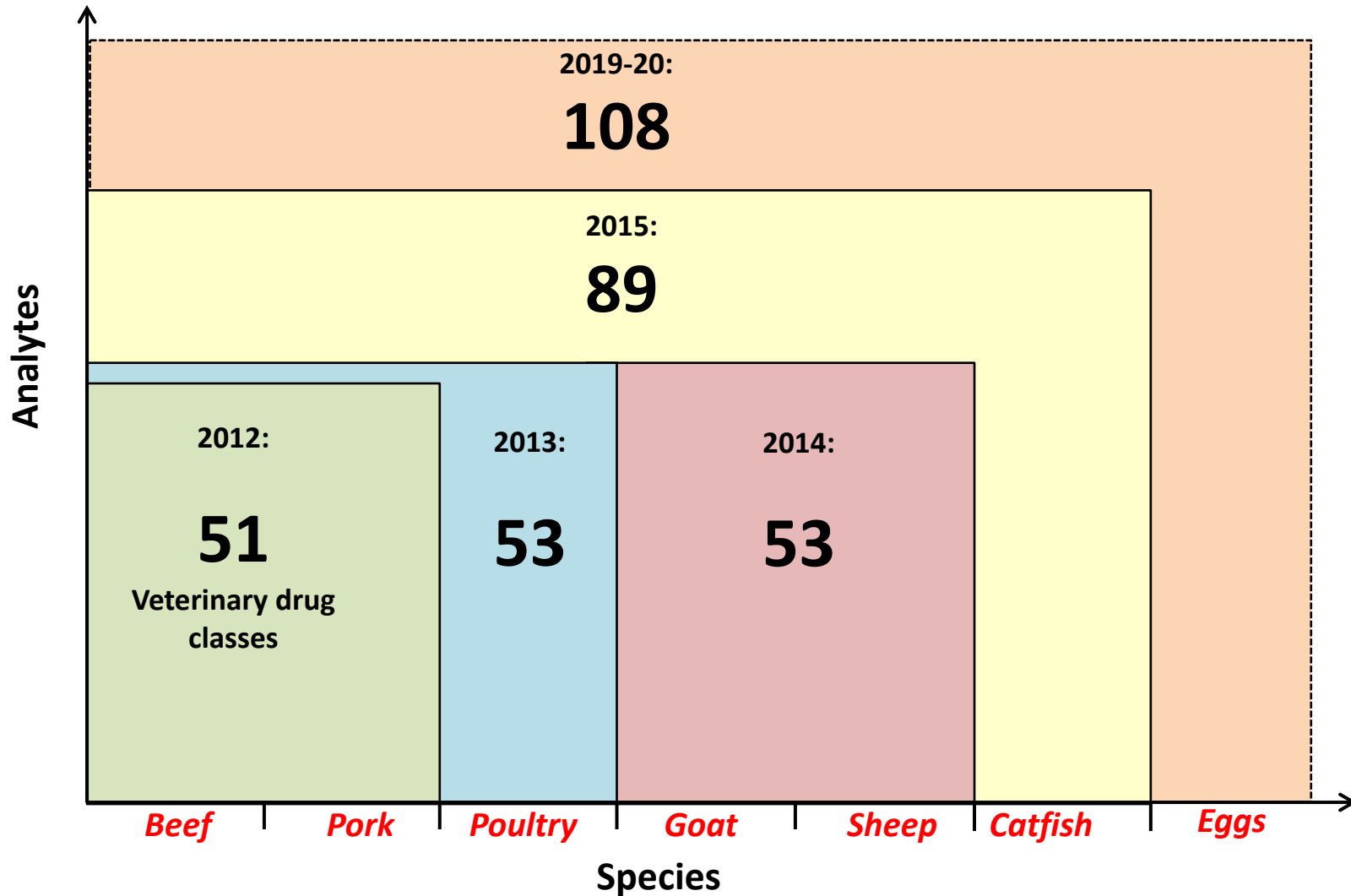


## Food Safety and Inspection Service: **Import Sampling**

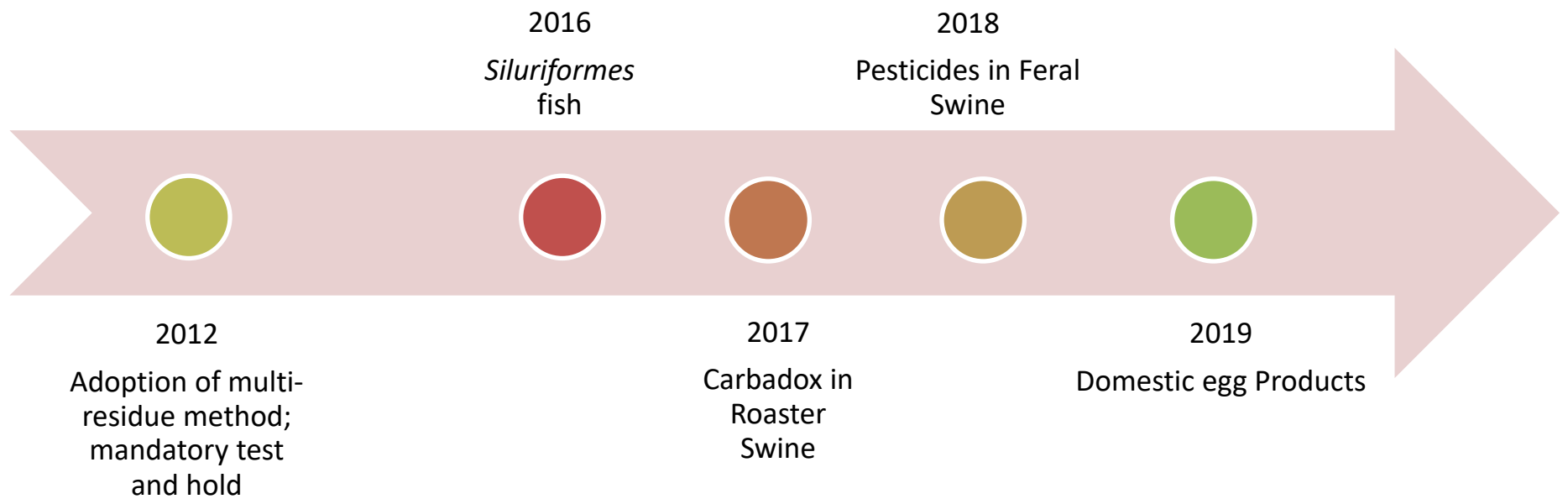
- Scheduled annually
- Samples collected at the U.S. port-of-entry
- Chemical methods/compounds selected for analysis in import plan may differ from those in the U.S. domestic plan



# Food Safety and Inspection Service: Evolution of Multi-Class Residue Screen Capability



# Food Safety and Inspection Service: **Recent Changes to the NRP**



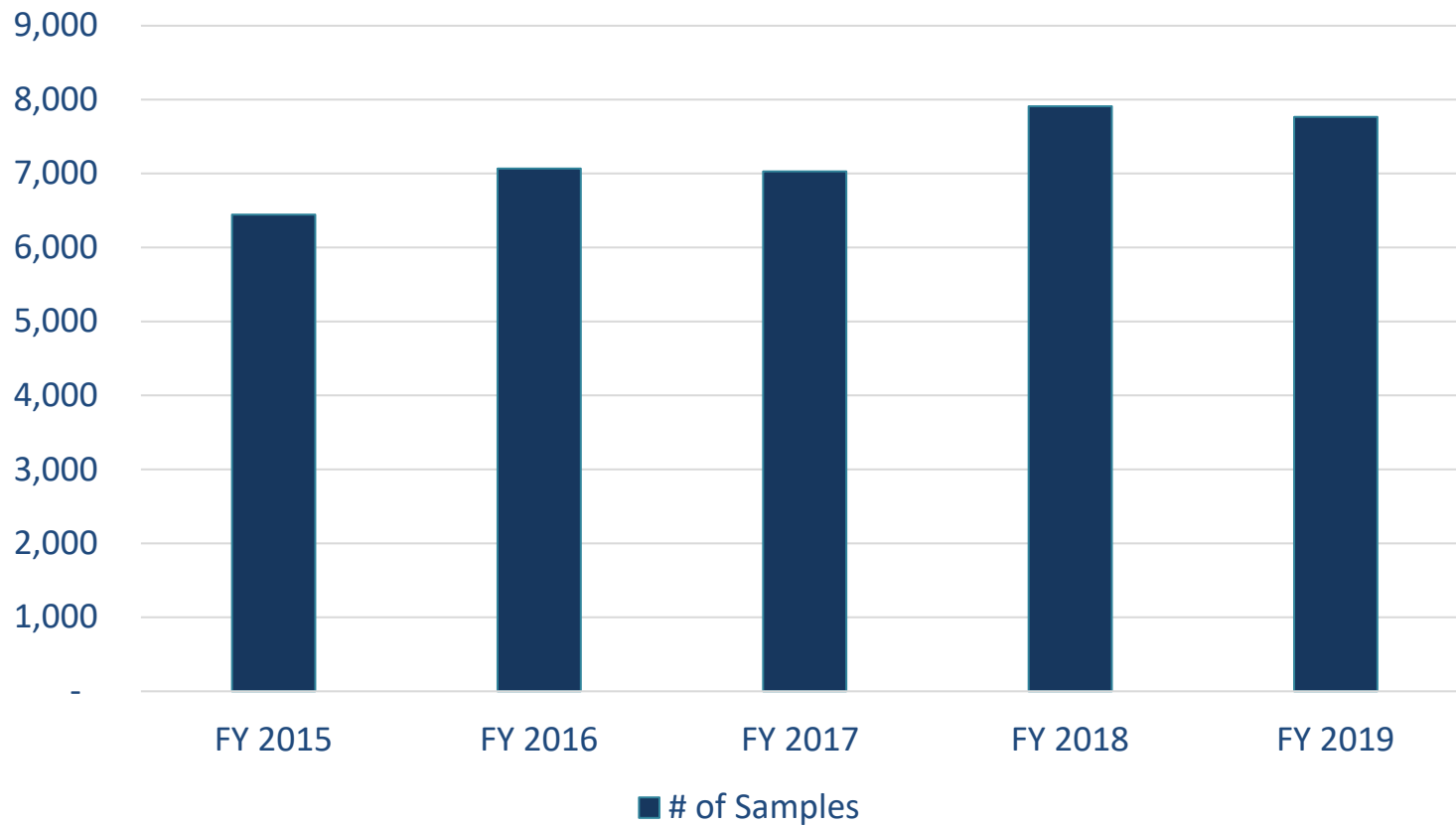
Food Safety and Inspection Service:

## Residue Findings

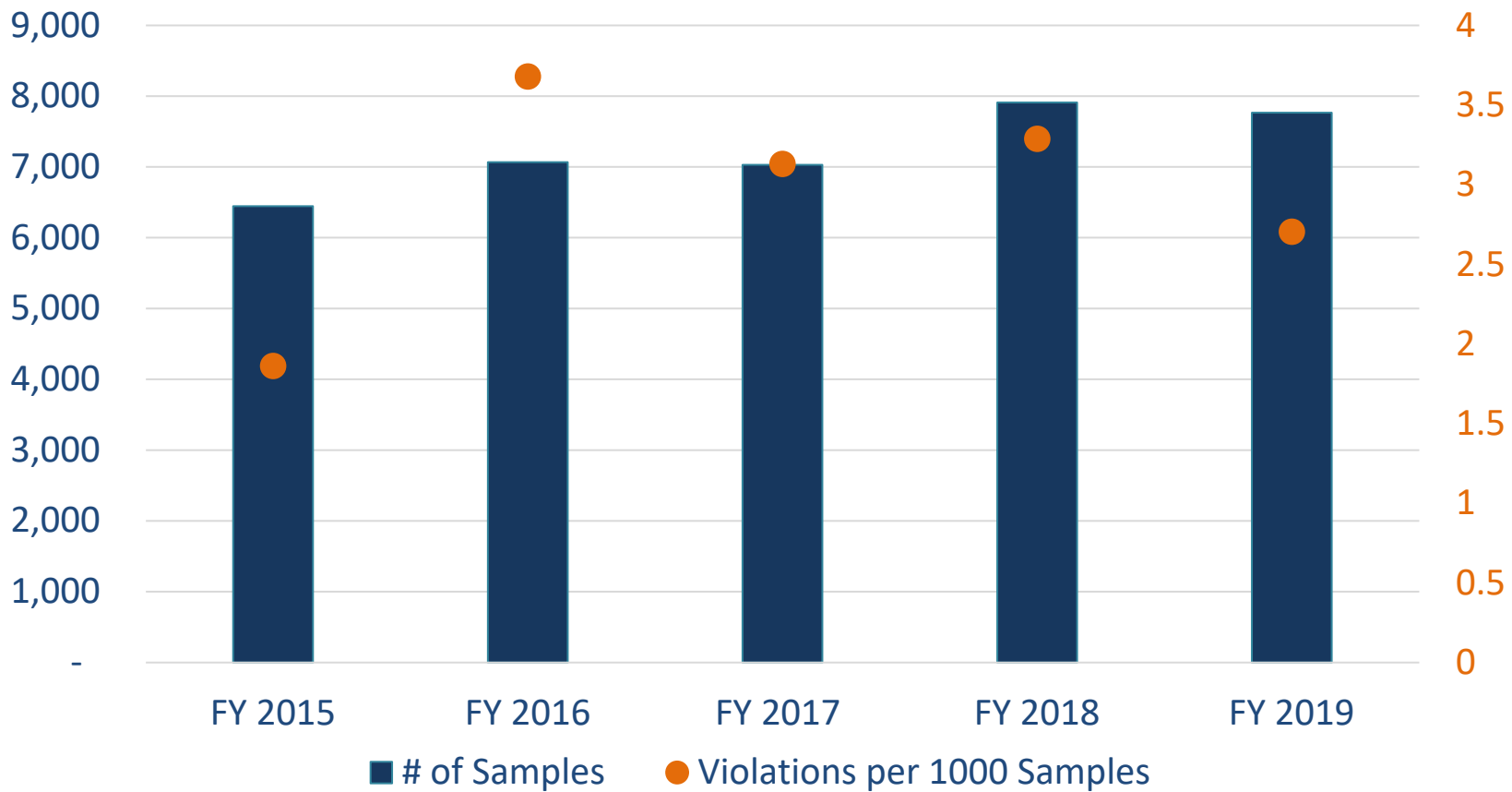
\* FY19 results are preliminary and subject to change

# Food Safety and Inspection Service: Domestic Scheduled Sampling (Federal Establishments)

## All Animal Classes

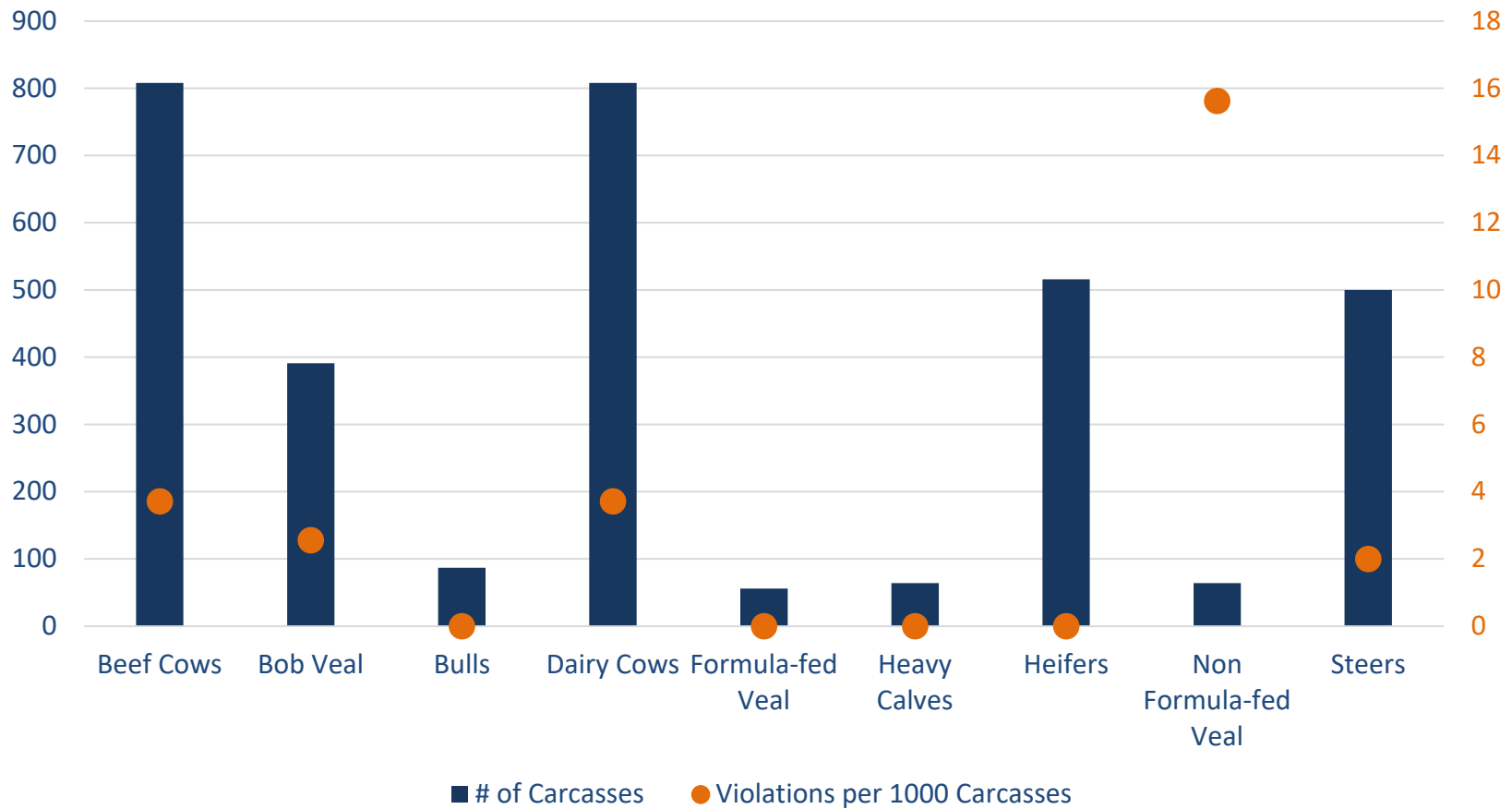


# Food Safety and Inspection Service: Domestic Scheduled Sampling (cont.)



# Food Safety and Inspection Service: Domestic Scheduled Sampling (cont.)

## Bovine Classes, 2019



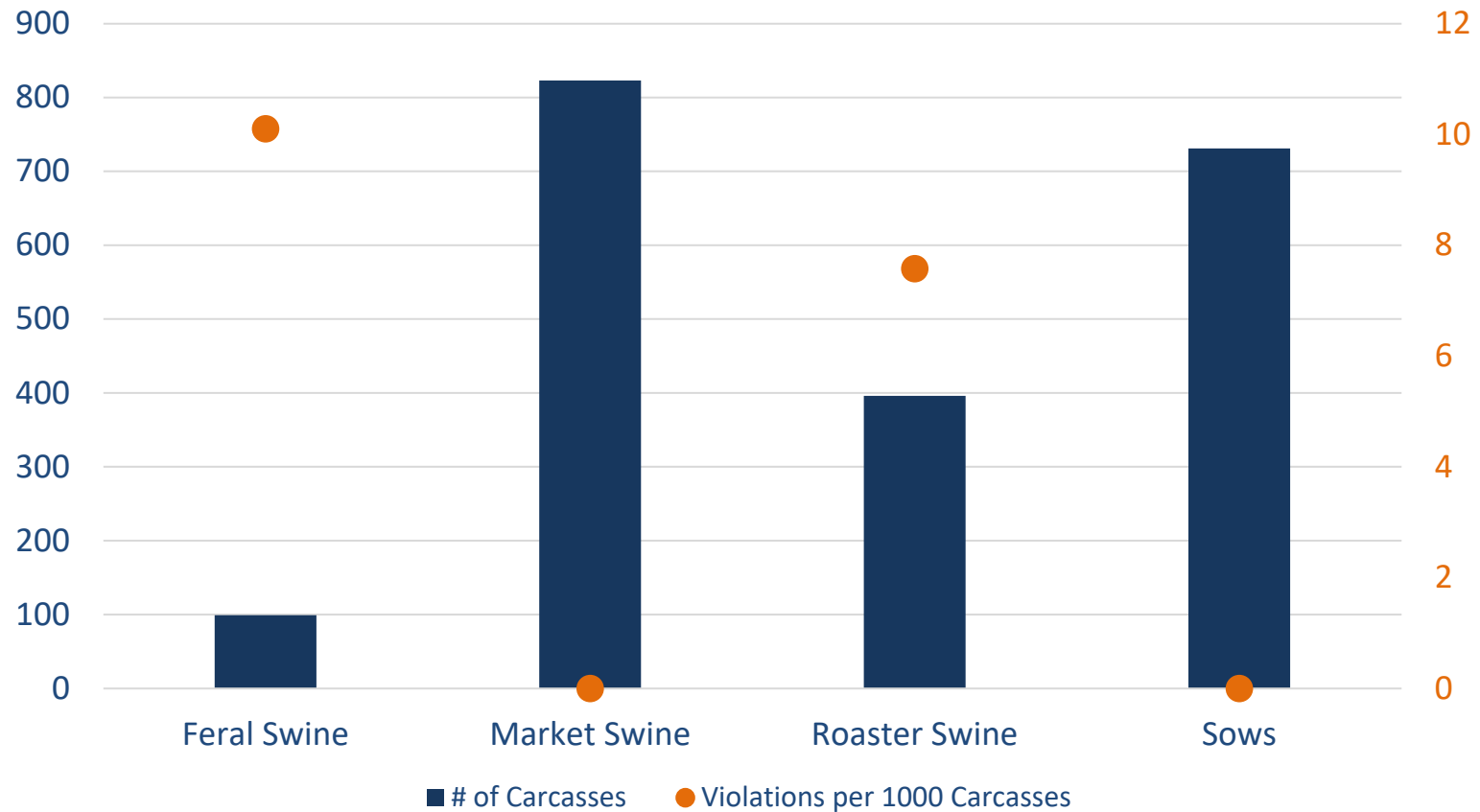
# Food Safety and Inspection Service: Domestic Scheduled Sampling (cont.)

## Violative Drug Residues in Bovine Classes, 2019

Analyte	Animal	Result	Tolerance
Desfuroylceftiofur	Beef Cow	0.528 ppm	0.4 ppm
Doramectin	Beef Cow	144.5 ppb	100 ppb
Florfenicol	Bob Veal	3.42 ppm	3.7 ppm
Florfenicol	Non Formula-fed Veal	8.98 ppm	3.7 ppm
Gentamycin Sulfate	Dairy Cow	Detected	0
Meloxicam	Dairy Cow	Detected	0
Piperonyl Butoxide	Steer	0.1512 ppm	0.1 ppm
Salbutamol	Beef Cow	Detected	0
Tetracycline	Dairy Cow	3.4 ppm	2.0 ppm

# Food Safety and Inspection Service: Domestic Scheduled Sampling (cont.)

## Swine Classes, 2019



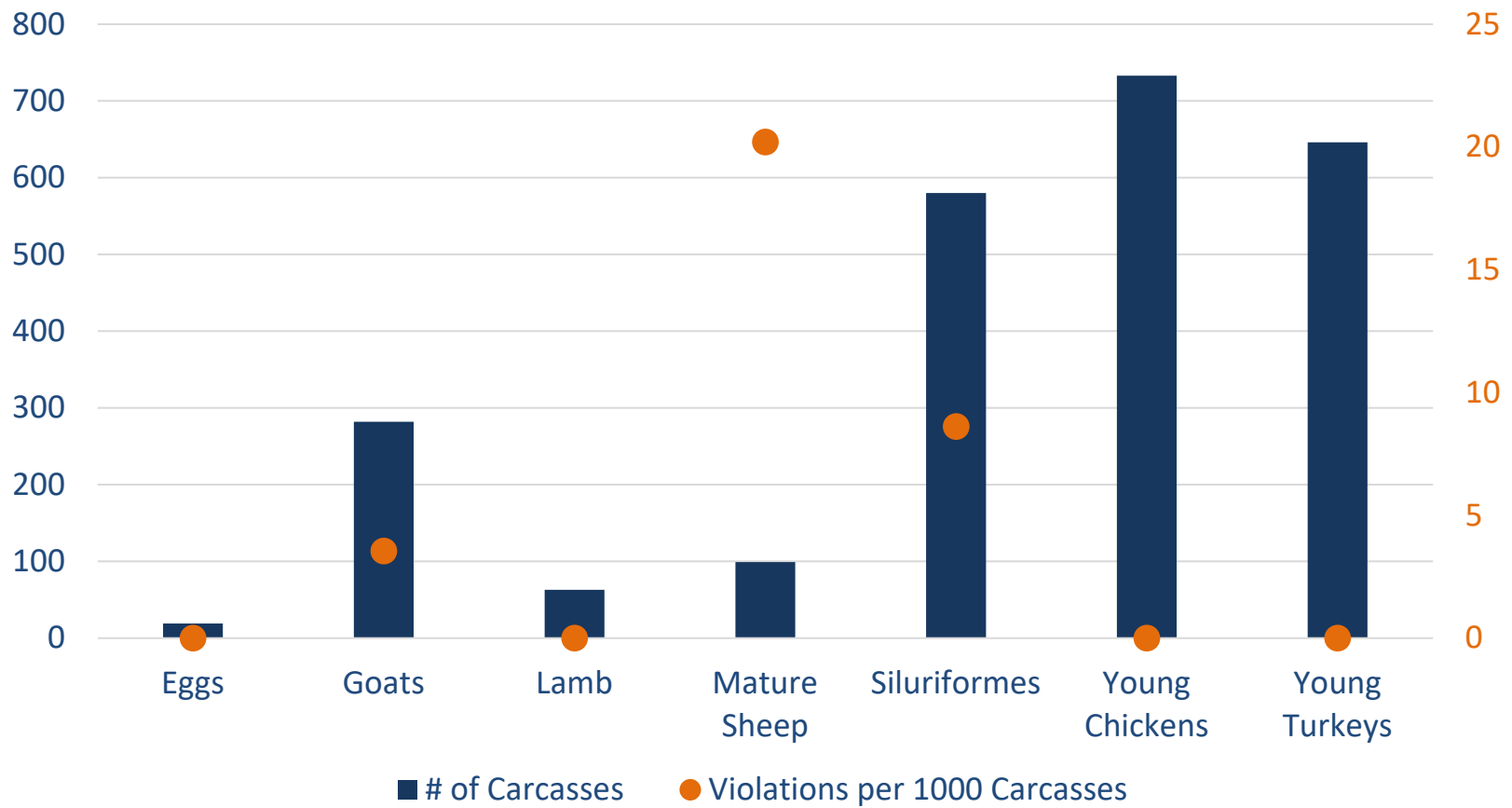
# Food Safety and Inspection Service: Domestic Scheduled Sampling (cont.)

## Violative Drug Residues in Swine Classes, 2019

Analyte	Animal	Result	Tolerance
Carbadox	Roaster Swine	207.22 ppb	30 ppb
Carbadox	Roaster Swine	40.8 ppb	30 ppb
Carbadox	Roaster Swine	375.8 ppb	30 ppb
Clothianidin	Feral Swine	Detected	0

# Food Safety and Inspection Service: Domestic Scheduled Sampling (cont.)

## Other Classes, 2018



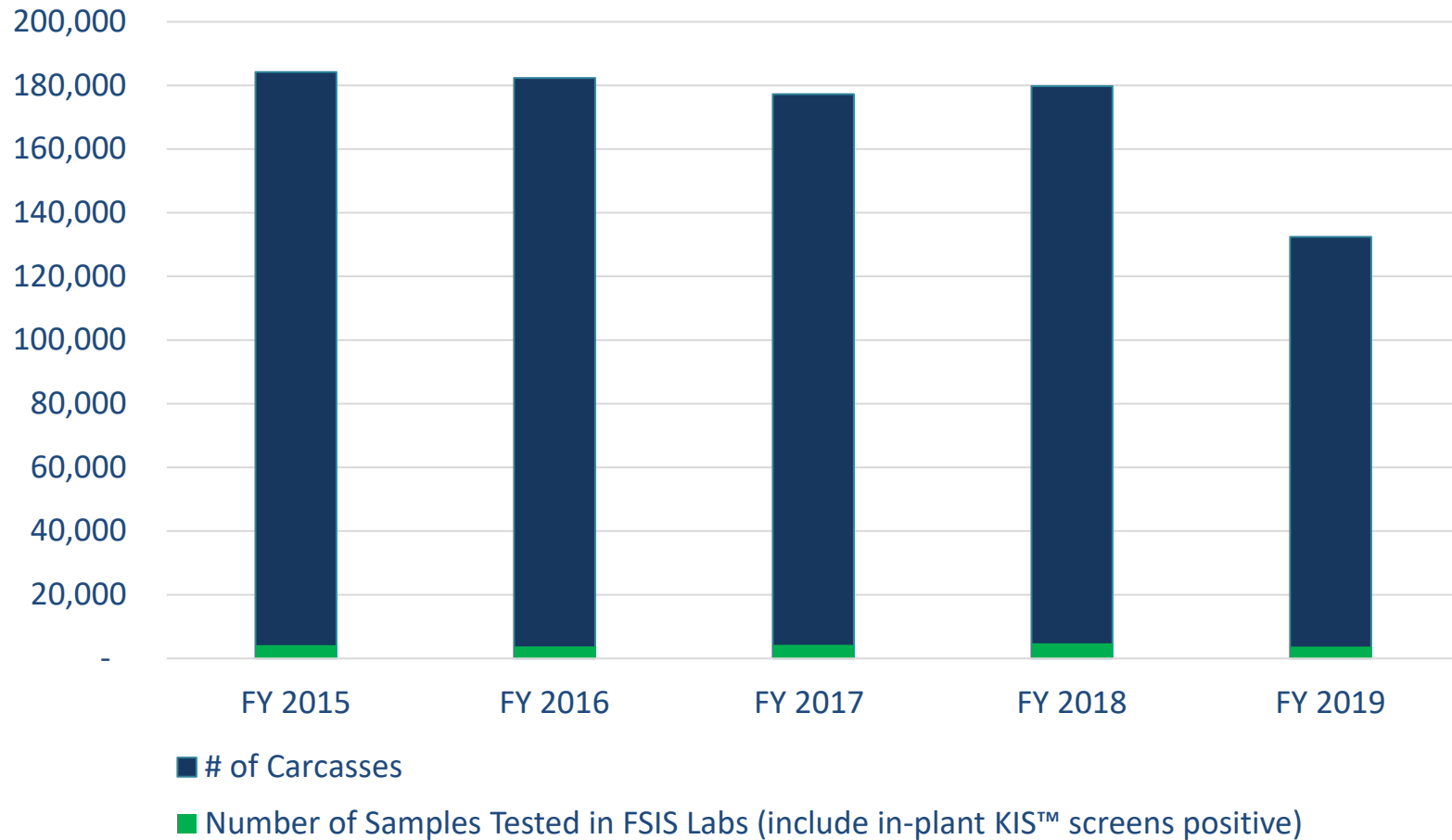
# Food Safety and Inspection Service: Domestic Scheduled Sampling (cont.)

## Violative Drug Residues in Other Classes, 2019

Analyte	Animal	Result	Tolerance
Atrazine and Metabolites	Siluriformes	Detected	0
Atrazine and Metabolites	Siluriformes	Detected	0
HCB	Siluriformes	Detected	0
Metolachlor	Siluriformes	Detected	0
Metolachlor	Siluriformes	Detected	0
Metolachlor	Siluriformes	Detected	0
Moxidectin	Mature Sheep	85.3 ppb	50 ppb
Moxidectin	Goat	35.5 ppb	0
Piperonyl Butoxide	Mature Sheep	0.2189 ppm	0.1 ppm

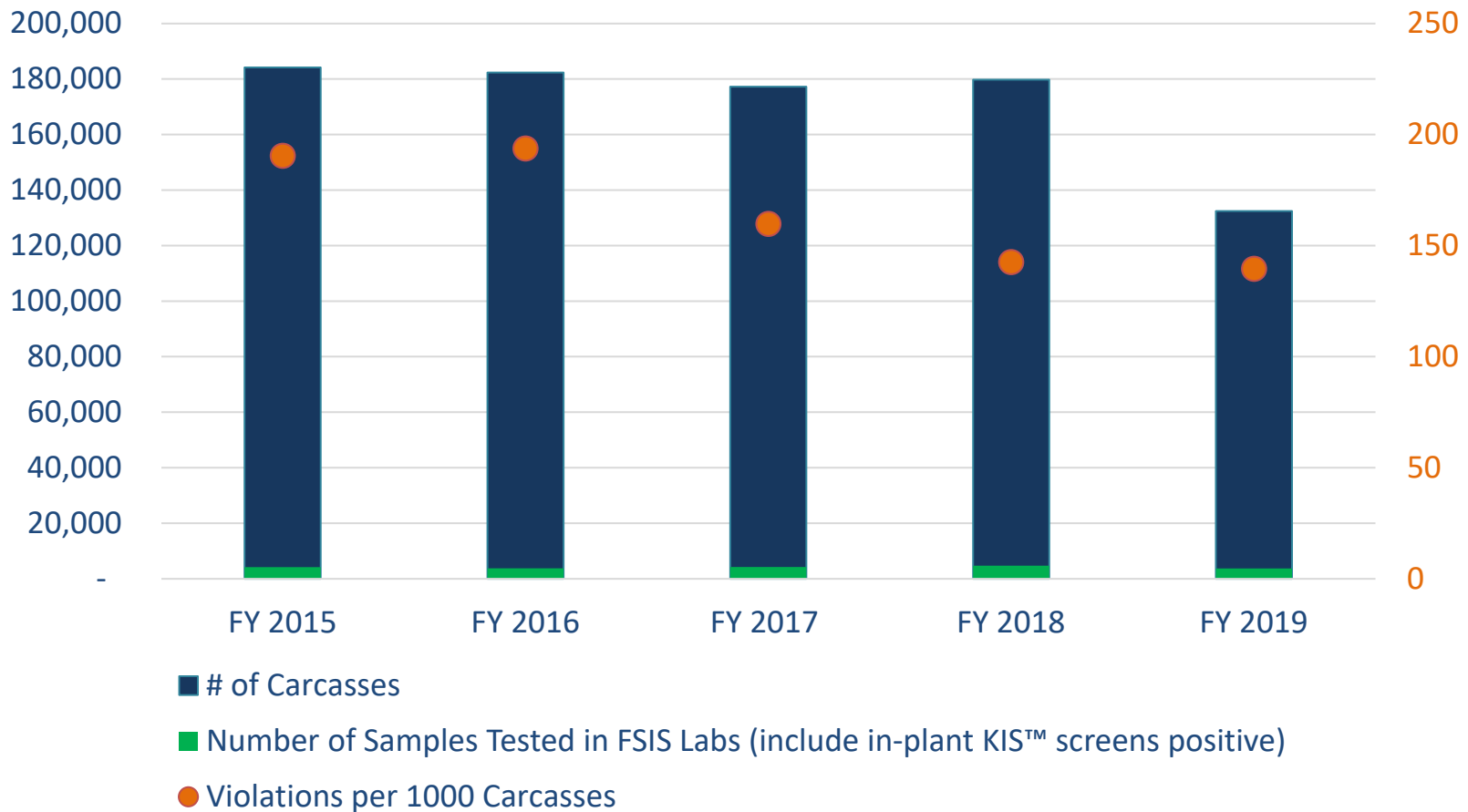
# Food Safety and Inspection Service: Inspector-Generated Sampling

## All Animal Classes



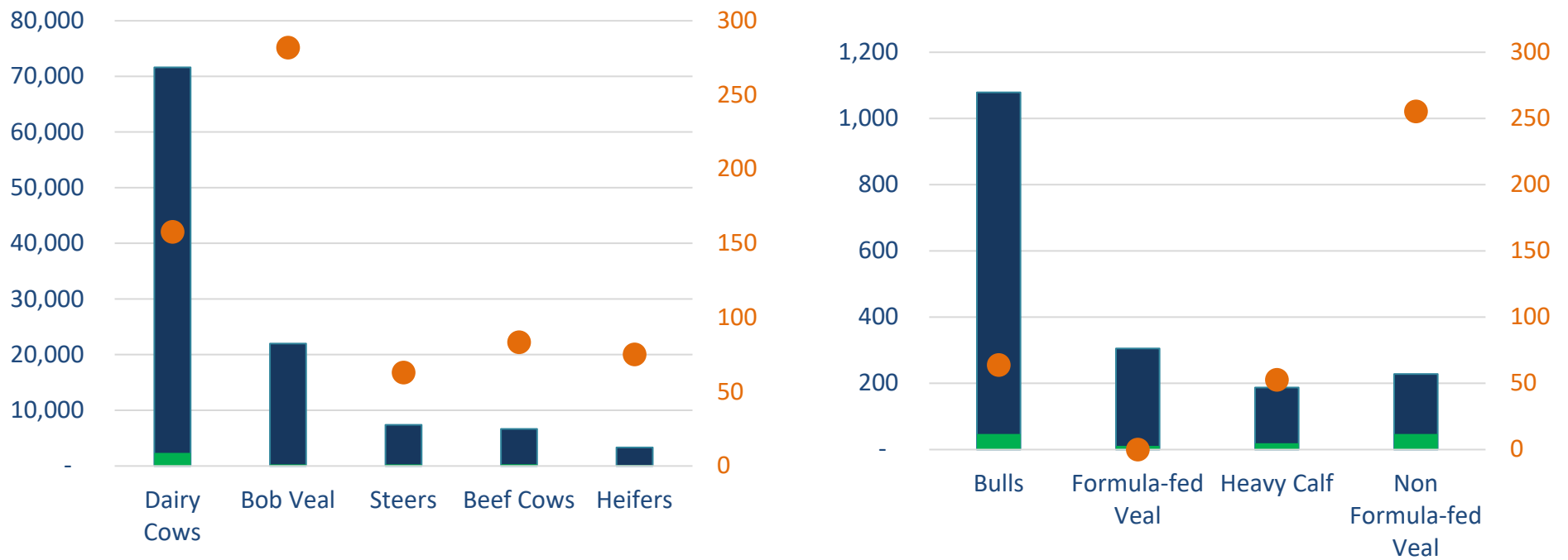
# Food Safety and Inspection Service: Inspector-Generated Sampling (cont.)

## All Animal Classes



# Food Safety and Inspection Service: Inspector-Generated Sampling (cont.)

## Bovine Classes, 2019



- # of Carcasses
- Number of Samples Tested in FSIS Labs (include in-plant KIS™ screens positive)
- Violations per 1000 Carcasses

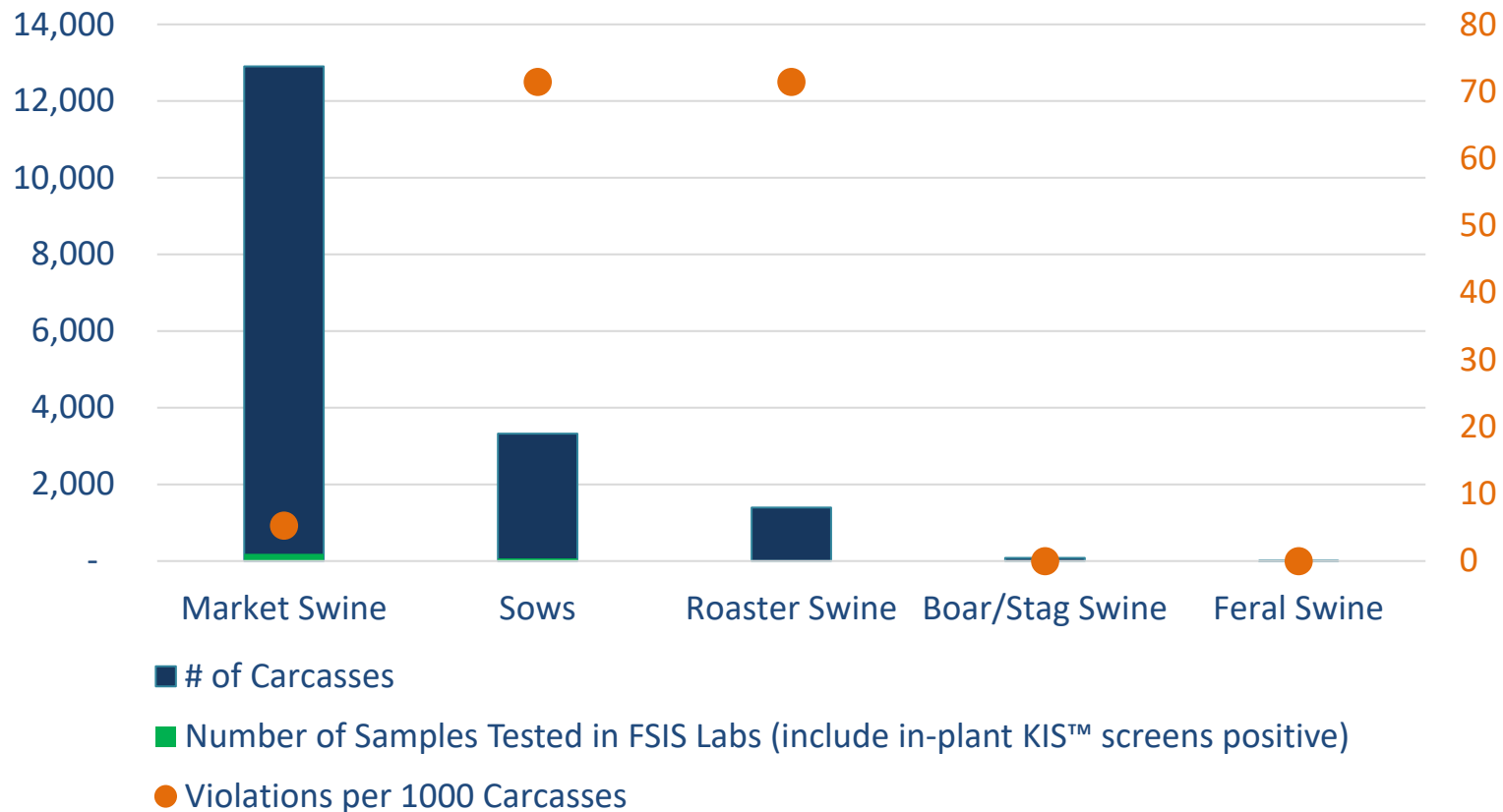
## Food Safety and Inspection Service:

### **Inspector-Generated Sampling (cont.)**

- Top 3 residues in dairy cattle and beef cows:
  - Desfuroylceftiofur
  - Penicillin
  - Sulfadimethoxine
- In bob veal, neomycin accounted for a large percentage of violations
- In steers, penicillin and flunixin most common

# Food Safety and Inspection Service: Inspector-Generated Sampling (cont.)

Swine Classes, 2019



## Food Safety and Inspection Service: **Inspector-Generated Sampling (cont.)**

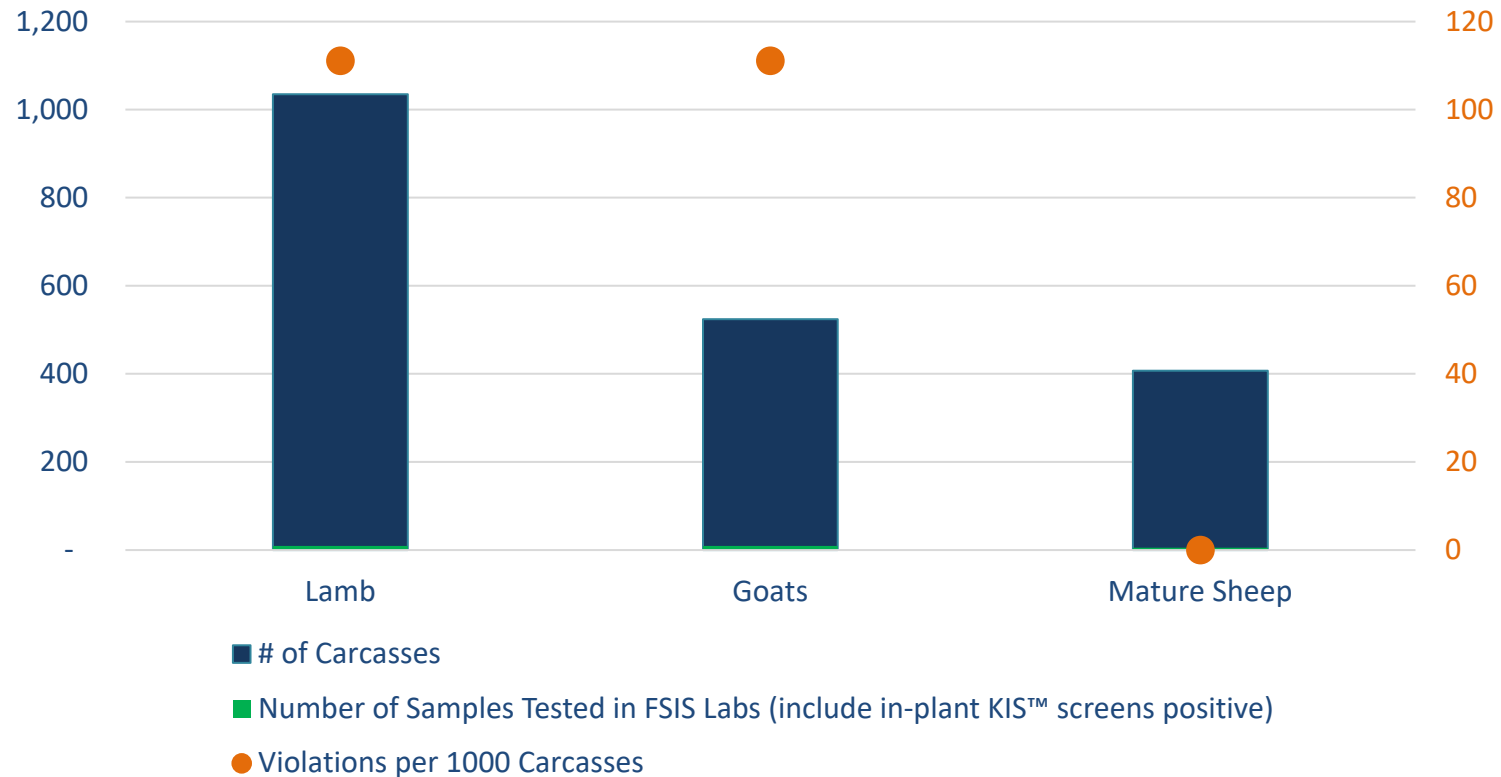
### Number of Violative Drug Residues in Swine Classes, 2019

Analyte	Market Swine*	Roaster Swine	Sow	Total*
Gentamycin Sulfate	1	1		2
Penicillin	1		5	6

\*Multiple violative residues were associated with a single carcass sample.

# Food Safety and Inspection Service: Inspector-Generated Sampling (cont.)

## Small Ruminant Classes, 2019



# Food Safety and Inspection Service: Inspector-Generated Sampling (cont.)

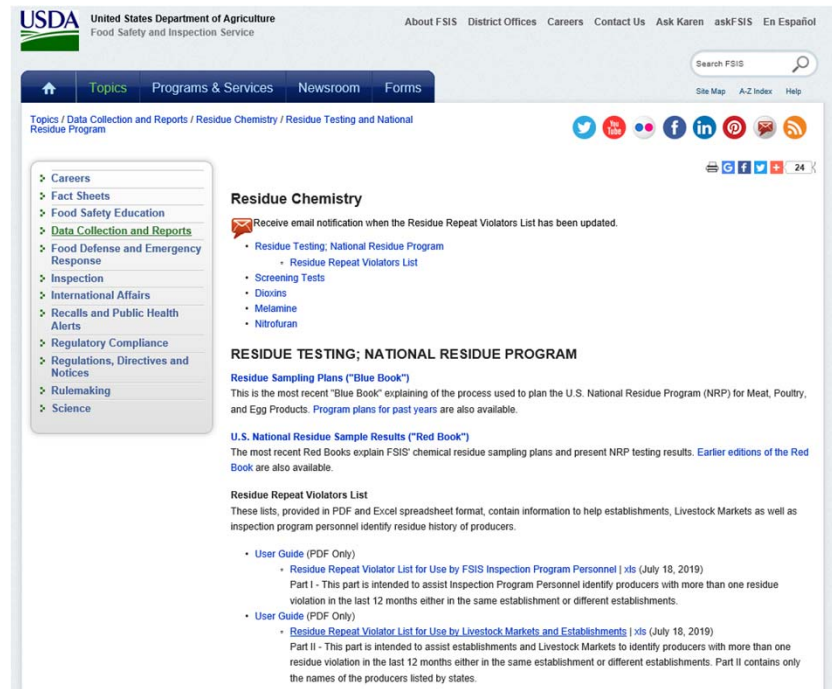
## Number of Violative Drug Residues in Small Ruminants, 2019

Analyte	Goat	Lamb	Total*
Florfenicol		2	2
Flunixin		2	2
Oxytetracycline	1		1

\*Multiple violative residues may be associated with a single carcass sample.

# Food Safety and Inspection Service: **FSIS Website Resources on NRP**

- Sampling plans and results
  - “Blue Book” describes annual sampling plans
  - “Red Book” describes annual results
  - Quarterly residue reports
- Repeat Violator List
- Residue Related Policies
  - FSIS Directive 10,800.1
- Guidance on KIS™ test



The screenshot displays the FSIS website's "Residue Chemistry" page. The page header includes the USDA logo and navigation links such as "About FSIS", "District Offices", "Careers", "Contact Us", "Ask Karen", "askFSIS", and "En Español". A search bar is located in the top right corner. The main content area is titled "Residue Chemistry" and features a sidebar with a menu of topics including "Careers", "Fact Sheets", "Food Safety Education", "Data Collection and Reports", "Food Defense and Emergency Response", "Inspection", "International Affairs", "Recalls and Public Health Alerts", "Regulatory Compliance", "Regulations, Directives and Notices", "Rulemaking", and "Science". The main content area includes a "Residue Repeat Violators List" section with a notification icon and a list of links for "Residue Testing, National Residue Program" and "Screening Tests". Below this is a "RESIDUE TESTING; NATIONAL RESIDUE PROGRAM" section with sub-sections for "Residue Sampling Plans ('Blue Book')", "U.S. National Residue Sample Results ('Red Book')", and "Residue Repeat Violators List". The "Residue Repeat Violators List" section provides information about the lists and includes links to "User Guide (PDF Only)" and "Residue Repeat Violator List for Use by FSIS Inspection Program Personnel | xls (July 18, 2019)".

Food Safety and Inspection Service:  
**Questions?**

[Kis.Robertson@usda.gov](mailto:Kis.Robertson@usda.gov)