



United States Department of Agriculture

# FSIS *Salmonella* Categorization Process for Raw Chicken Parts and Comminuted Poultry Products

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The United States Department of Agriculture  
Food Safety and Inspection Service (FSIS)



Today we will review the nuts and bolts of *Salmonella* categories, focusing on raw chicken parts and comminuted poultry products. We'll look at these topics:

- 1) How samples are assigned.
- 2) How categories are determined.
- 3) How establishments move between categories.
- 4) When, where, and how the category data are available.



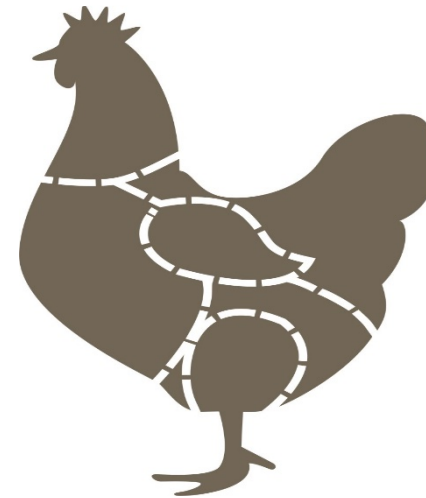
# FSIS Sampling Procedures



# Objectives

In this section, we will discuss FSIS sampling procedures for raw chicken parts and comminuted poultry products, including:

- Review scheduling of routine samples
- Discuss frequency of sampling assignments
- Review scheduling of follow-up samples



# Scheduling of Routine Samples

## Eligibility:

- Active establishments with average daily production volume > 1,000 lbs./day.
- Products: raw chicken parts, comminuted chicken, and comminuted turkey (See [FSIS website](#)).
- FSIS is sampling very low-volume producers (1,000 or less lbs./day), mechanically separated poultry, and other chicken parts under exploratory programs, but there are no applicable performance standard.

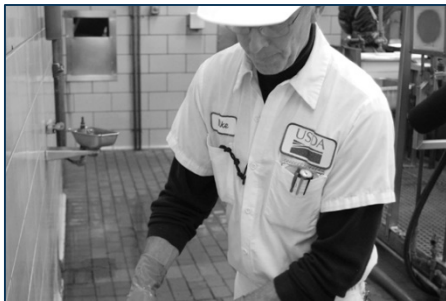
## Frequency:

- Refers to the number of samples assigned each month. This is determined by average daily production volume category in PHIS profile and other factors.

# Sampling Frequency

- ODIFP assigns between 0 and 5 samples per month to eligible establishments.
- Factors accounting for establishment to establishment differences in sampling frequency:
  - Average daily production volume
  - History of FSIS's *Salmonella* positive results
  - The specific product (raw chicken parts, comminuted chicken, comminuted turkey)
- The overall goal is to assign 52 samples per year to the largest establishments, and at least 10 samples per year to all eligible establishments.

# Follow-Up Sampling



- Beginning in April 2018, FSIS assigned follow-up sampling sets to all establishments with products exceeding a performance standard. Set size determined by the establishment's production schedule:
  - 4 or more production days per month: 16 follow-up samples
  - 3 or less production days per month: 8 follow-up samples
- Follow-up sampling begins approximately 30 days after receiving the Category 3 alert.
- In contrast to routine samples, follow-up samples are collected as quickly as possible, up to one sample per production shift.
- Only one sample, either routine or follow-up, is taken in one shift, and routine samples are given first priority.

# How FSIS Determines an Establishment's Category





# Objectives

In this section, we will review:

- Establishment category definitions
- The two-step process for determining establishment category
- The process for adjusting *Salmonella* percent positive for establishments with less than 52 samples during a completed, 52-week moving window



## Category Definitions



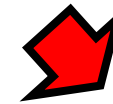
### Consistent Process Control:

Establishments that achieve **50 percent or less** of maximum allowable percent positive during all completed 52-week moving windows over the last 13 weeks.



### Variable Process Control:

Establishments at or below the maximum allowable percent positive for all completed 52-week moving windows, but have results **greater than 50 percent** of the maximum allowable percent positive during any completed 52-week moving window over the last 13 weeks.



### Highly Variable Process Control:

Establishments with **greater than the maximum** allowable percent positive during any completed 52-week moving window over the last 13 weeks.

# Categorization: 2-Step Process



## Step 1: Determine the category of the most recent window.

- Each week, FSIS determines the Window Category (0,1,2, or 3) for the most recently completed 52-week window, using an adjustment if applicable.

## Step 2: Determine the establishment's category.

- FSIS gathers data for the 13 most recent windows. The window with the greatest percent positive determines the establishment's category.
- FSIS will need to evaluate *at least one of the last 13 windows* against the performance standard, or the establishment will be listed as NA in categorization reports.

- Performance standards were announced in Federal Register (81 FR 7285).
- FR describes multiple procedures for determining whether establishments meet the standard.

Product	Maximum acceptable percent positive		Performance standard *	
	<i>Salmonella</i>	<i>Campylobacter</i>	<i>Salmonella</i>	<i>Campylobacter</i>
Comminuted Chicken (325 g sample) .....	25.0	1.9	13 of 52 .....	1 of 52
Comminuted Turkey (325 g sample) .....	13.5	1.9	7 of 52 .....	1 of 52
Chicken Parts (4 lb. sample) .....	15.4	7.7	8 of 52 .....	4 of 52

# 52

If 52 samples collected:  
use performance  
standard.

Product	Performance Standard
Chicken parts	8
Comm. Chicken	13
Comm. Turkey	7

# 53 or



If 53 or more samples collected: use percent positive.

**Answer:**

56 samples are collected, and 8 are *Salmonella* positive.

$$8/56 \times 100 \approx 14.4\%$$

(Approximately)

# 10 to 51

If 10-51 samples collected:  
adjust the percent positive by subtracting 1 from the number of *Salmonella* positives, and compare against max acceptable percent positive.

**Answer:**

28 samples are collected, and 8 are *Salmonella* positive.

$$(8 - 1)/28 \times 100 \approx 25.0\%$$

[ $\approx$  28.6% without Adjustment]

**Must be less than standard**

# 9 or



If 9 or less samples collected: do not evaluate the window unless the number of *Salmonella* positives exceeds 7 for comminuted turkey, or 8 for chicken parts.

# Adjusted Percent Positive Calculation

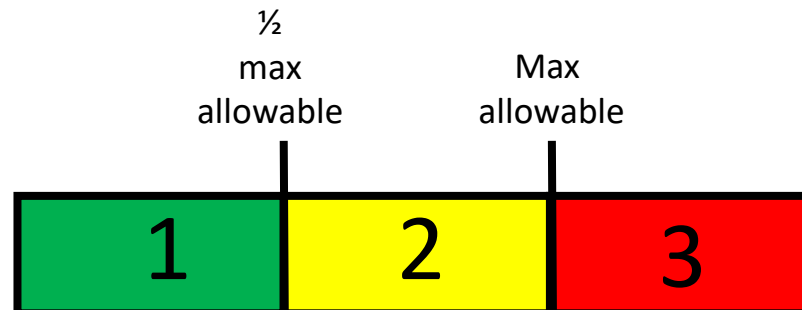
- Smaller establishments are generally scheduled for fewer samples.
- Fewer samples mean that an establishment could potentially be meeting (or not meeting) the standard but—due to random chance alone—FSIS might misclassify the establishment.

**Analogy:** with just 5 flips of a fair coin, the outcome of head/tails may randomly suggest it is not fair. But 50 flips will leave little doubt as to the true nature of the coin.

- To counter-balance, FSIS sets the allowable positives for small sample numbers—fewer than 52 for chicken parts and comminuted poultry—so that smaller establishments are not at a disadvantage for having fewer collected samples. In effect, FSIS allows an additional positive sample before categorizing.

## Step 2: Determine Establishment Category

- Gather data for 13 most recent windows.
- If at least 1 window can be categorized, determine window with highest percent positive.
  - Category 3: At least one window exceeds the product's standard.
  - Category 2: At least one window exceeds  $\frac{1}{2}$  of the product's standard, but no windows exceed the standard.
  - Category 1: No windows exceed  $\frac{1}{2}$  of the product's standard.



# Category Examples

With and Without Follow-up Sampling





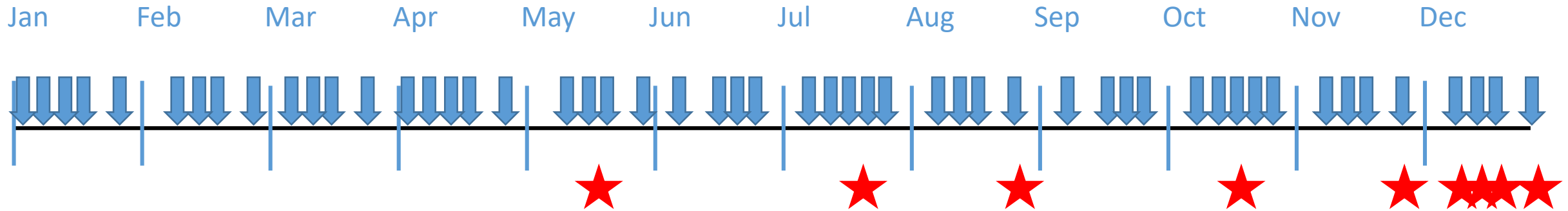
# Objectives

In this section, we will show examples of how an establishment can improve its category status over time, including:

- The effect of follow-up sampling
- The effect of timing of *Salmonella* positive samples during the year

**Example: Determine category for establishments producing raw chicken parts.**

**Step One:** Determine whether establishment's Salmonella percent positive in the 52-week window exceeds the maximum allowable rate.

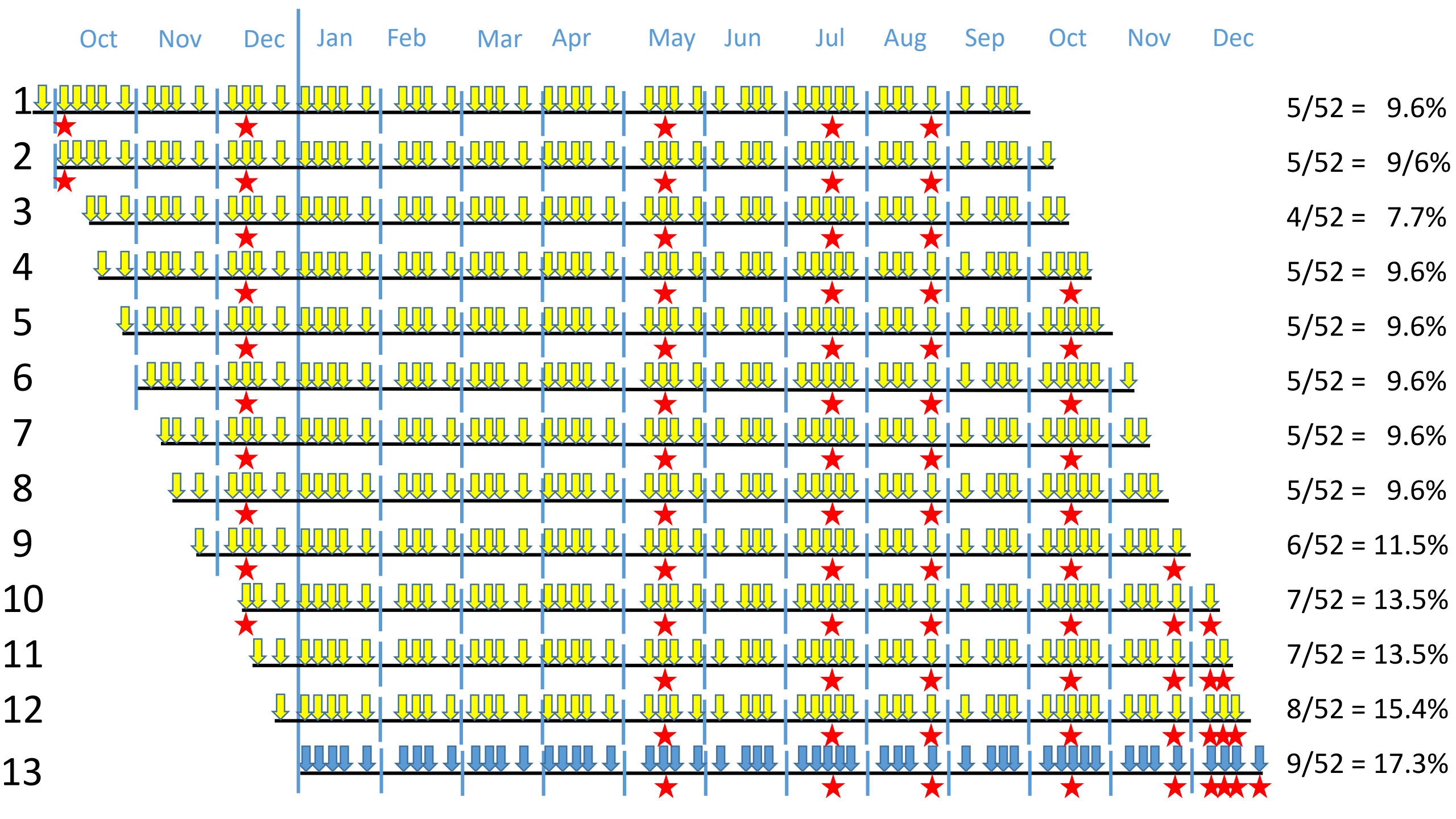


★ Positive Sample

**52 Samples**  
**9 Positive** → **Exceeds standard (8)**

**Step Two:** Determine *Salmonella* percent positive in each of the 13 most recent windows.

NEXT 



1	5/52 = 9.6%
2	5/52 = 9.6%
3	4/52 = 7.7%
4	5/52 = 9.6%
5	5/52 = 9.6%
6	5/52 = 9.6%
7	5/52 = 9.6%
8	5/52 = 9.6%
9	6/52 = 11.5%
10	7/52 = 13.5%
11	7/52 = 13.5%
12	8/52 = 15.4%
13	9/52 = 17.3%

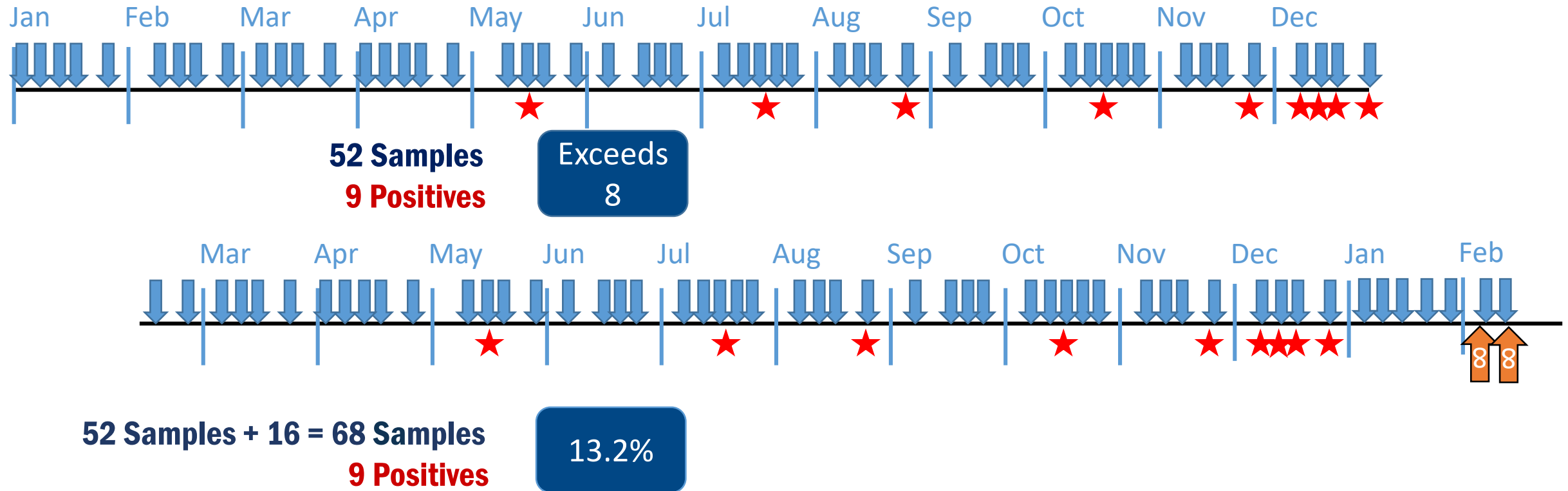
## Chicken Parts

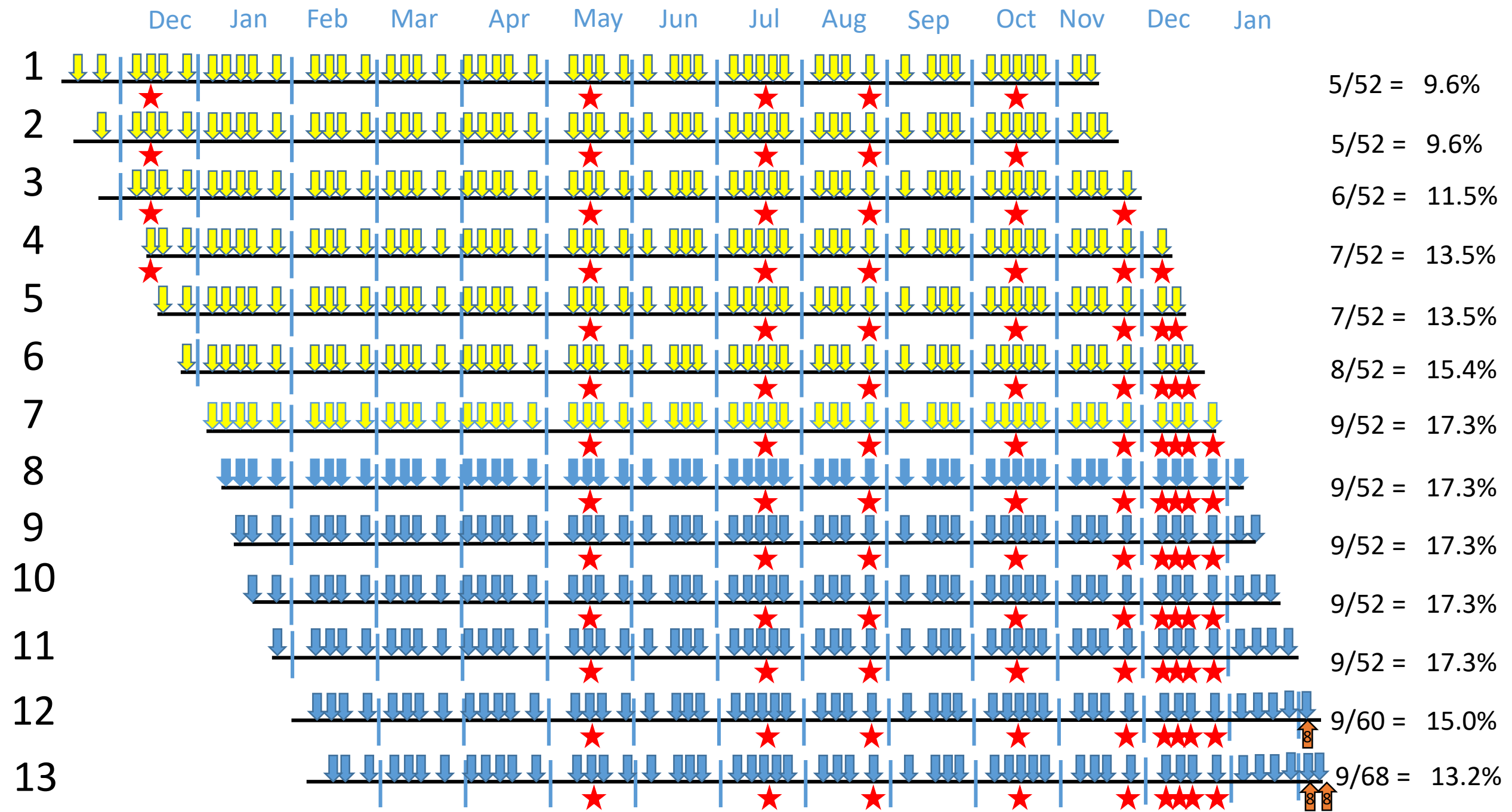


## Category 3

## Example 2: How does the follow-up sampling set affect the category for this establishment?

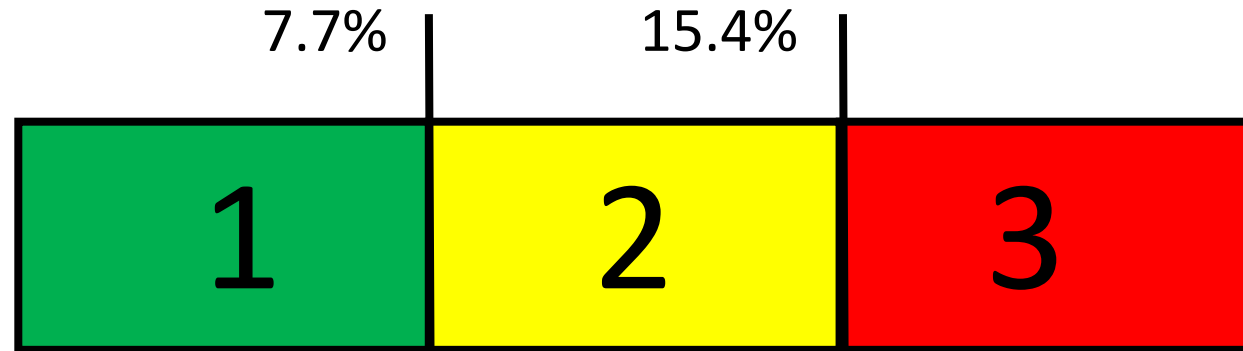
The same establishment from the previous example is assigned 16 follow-up samples which are collected over an 8-week period after waiting 30 days.





1	5/52 = 9.6%
2	5/52 = 9.6%
3	6/52 = 11.5%
4	7/52 = 13.5%
5	7/52 = 13.5%
6	8/52 = 15.4%
7	9/52 = 17.3%
8	9/52 = 17.3%
9	9/52 = 17.3%
10	9/52 = 17.3%
11	9/52 = 17.3%
12	8/60 = 15.0%
13	8/68 = 13.2%

## Chicken Parts



## Category 3

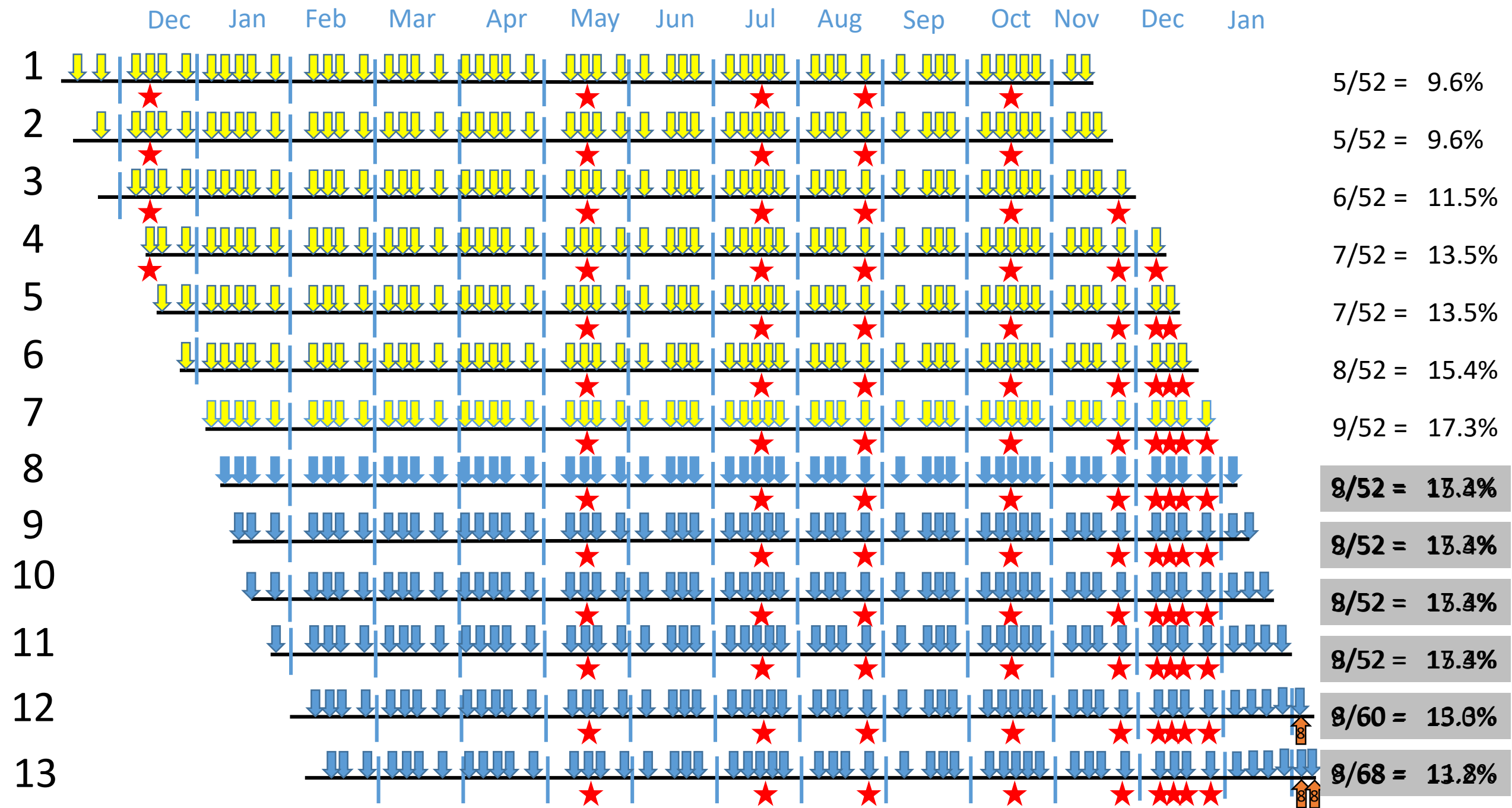


7	9/52 = 17.3%	← Assigned to Cat 3
8	9/52 = 17.3%	
9	9/52 = 17.3%	
10	9/52 = 17.3%	
11	9/52 = 17.3%	
12	9/60 = 15.0%	} Est takes corrective actions } 16 follow-up samples
13	9/68 = 13.2%	
14	9/68 = 13.2%	
15	9/68 = 13.2%	
16	9/68 = 13.2%	
17	9/68 = 13.2%	
18	9/68 = 13.2%	
19	9/68 = 13.2%	
20	9/68 = 13.2%	
21	9/68 = 13.2%	
22	9/68 = 13.2%	
23	9/68 = 13.2%	
24	9/68 = 13.2%	

## EXAMPLE:

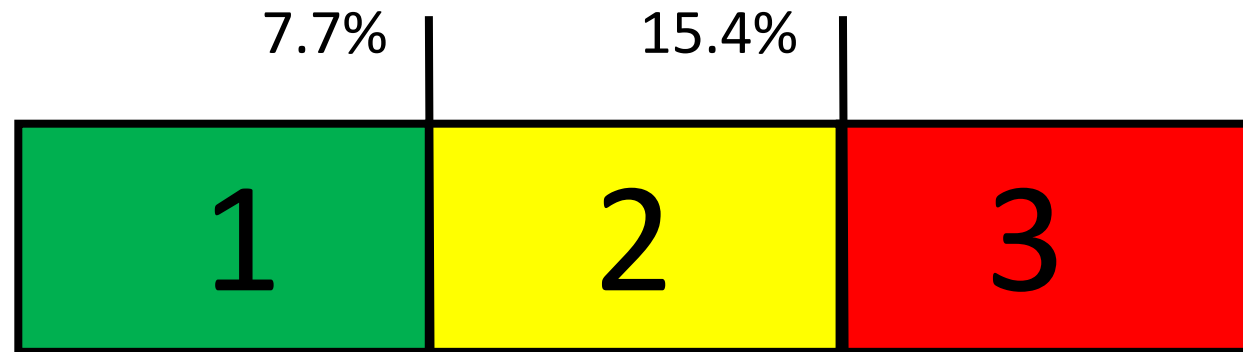
Establishment in Category 3 for chicken parts receives 16 follow-up samples and no additional positives.

- Follow-up sampling results are part of 13 subsequent windows.
- If no additional positives, this establishment will be assigned to Category 2 after 17 weeks.



1	5/52 = 9.6%
2	5/52 = 9.6%
3	6/52 = 11.5%
4	7/52 = 13.5%
5	7/52 = 13.5%
6	8/52 = 15.4%
7	9/52 = 17.3%
8	8/52 = 15.4%
9	8/52 = 15.4%
10	8/52 = 15.4%
11	8/52 = 15.4%
12	8/60 = 13.3%
13	8/68 = 11.8%

## Chicken Parts



Est. moves into Cat 2  
4 weeks earlier

# Communications with Establishments and Inspectors



# FSIS Category Reports



## PHIS Reports

- The Establishment Profile Report includes Category Status for poultry products subject to FSIS performance standards for *Salmonella*.
- Available to the establishment through the industry access to PHIS (must request access through eAuth).
- Updates weekly to reflect most recently completed windows.

## Quarterly Letters

- Letters are mailed to establishment management, and contain the most recent category information for poultry products subject to FSIS performance standards for *Salmonella*.

## PHIS Alerts

- Sent to inspectors and district officials when the establishment is assigned to Category 2 or 3.
- Inspectors are to convey information during weekly meeting.

# Individual Category Postings

## Salmonella Categorization of Individual Establishments Using Moving Windows for Young Chicken Carcasses and Young Turkey Carcasses

Reporting period for this data: January 8, 2017–March 31, 2018

- Use the up or down arrows to sort data based on any column heading.
- To filter results, enter criteria in the form associated with any column header.
- An asterisk (\*) indicates that a category status has changed since the previous monthly posting.
- The entire dataset is also available in [Excel \(xlsx\)](#) or [PDF](#).
- Establishments that produce 1,000 lbs. or less of each product per day, or slaughter 20,000 head or fewer of each species per year, are not included.
- Category definitions and contact information are presented after the table.

Establishment Number ▲▼	Establishment Name ▲▼	City ▲▼	State ▲▼	District Number ▲▼	Product Class ▲▼	Salmonella Category ▲▼
L12-B34	Chicken Little Farms	Pleasantville	Somewhere, USA	80	Young Chicken Carcasses	2

<https://www.fsis.usda.gov/wps/portal/fsis/topics/data-collection-and-reports/microbiology/salmonella-verification-testing-program/establishment-categories>

# Aggregate Category Postings

**Comminuted Chicken Establishment Aggregate Categories for Sample Collection  
 Period February 5, 2017 through April 28, 2018**

		All Establishments		Large Establishments		Small Establishments		Very Small Establishments	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
<i>Salmonella</i>	Category 1	17	28.81	3	27.27	12	27.91	2	40
	Category 2	15	25.42	0	0	13	30.23	2	40
	Category 3	27	45.76	8	72.73	18	41.86	1	20
	TOTAL	59	100	11	100	43	100	5	100

<https://www.fsis.usda.gov/wps/portal/fsis/topics/data-collection-and-reports/microbiology/salmonella-verification-testing-program/aggregate-data>

# Going Forward

- In November 2018, FSIS will post a template for raw chicken parts and comminuted poultry, and begin posting establishment categories after Thanksgiving.
- This is part of an ongoing strategy to address *Salmonella* and *Campylobacter* control in establishments producing raw poultry products, which includes:
  - Public Postings
  - Issuing instructions describing FSIS actions at Category 3 establishments (consistent with the Feb. 2016 FR)



# Additional Resources

**New Performance Standards for *Salmonella* and *Campylobacter* in Not-Ready-to-Eat Comminuted Chicken and Turkey Products and Raw Chicken Parts and Changes to Related Agency Verification Procedures: Response to Comments and Announcement of Implementation Schedule**

<https://www.fsis.usda.gov/wps/wcm/connect/6b5dd566-a1b7-48e4-a93f-f60848785202/4339.1.pdf?MOD=AJPERES>

**FSIS Notice 18-18 (3/23/18): Follow-up Sampling in Raw Poultry Establishments Not Meeting *Salmonella* Performance Standards**

<https://www.fsis.usda.gov/wps/wcm/connect/6f8e73e3-e68f-4268-a045-ff856b09b8f1/18-18.pdf?MOD=AJPERES>

**FSIS Establishment Eligibility Criteria for the *Salmonella* and *Campylobacter* Verification Sampling Program and FSIS Scheduling Algorithm for the *Salmonella* and *Campylobacter* Verification Sampling Programs for Raw Poultry**

<https://www.fsis.usda.gov/wps/wcm/connect/e7f7d54d-2865-46d8-bec9-e12fa4fa073a/reasonable-accommodation-brochure.pdf?MOD=AJPERES>

***Salmonella* and *Campylobacter* Verification Program for Raw Meat and Poultry Products- Supplemental documents containing the sampling program instructions**

<https://www.fsis.usda.gov/wps/portal/fsis/topics/regulations/directives/10000-series>