Summary of FSIS Government Microbiological Sampling Programs Frequencies

NOTE: This document is updated from the 2018 version. It includes revised footnotes.

FSIS microbiological sampling and testing programs are implemented to ensure that establishments maintain control of their production processes and adhere to FSIS regulations, policies and pathogen performance standards. Ongoing government sampling in FSIS-regulated domestic establishments allows FSIS to assess the effectiveness of industry process controls, compliance with performance standards, and other efforts to control the presence of pathogens in FSIS-regulated meat, poultry, and processed egg products. These microbiological sampling and testing programs are an important component of the FSIS mission 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 into commerce of any such products that are adulterated or misbranded. FSIS conducts routine microbiological sampling and testing for *Salmonella*, *Campylobacter*, *Listeria monocytogenes*, and Shiga toxin-producing *Escherichia coli* (STEC), including *E. coli* O157:H7 and six non-O157 STEC (O26, O45, O103, O111, O121, and O145). The analyses for these pathogens are conducted using methods as outlined in the FSIS Microbiology Laboratory Guidebook (MLG).

In this attachment, FSIS is providing a summary **(Tables 1-3)** of the frequency of government sampling and the microbiological analyses performed by FSIS. Central competent authorities (CCAs) can use this information as a reference when implementing government microbiological testing. The tables also include test portions analyzed by FSIS for each of these sampling programs.

For your reference, please see additional helpful links below:

- FSIS Annual Sampling Program Plan, Fiscal Year 2019
- FSIS Sampling Results for FSIS Regulated Products
- FSIS Directive 10,010.1[1], Sampling Verification Activities for Shiga Toxin-Producing *Escherichia coli* (STEC) in Raw Beef Products
- FSIS Directive 10,250.1[2], *Salmonella* and *Campylobacter* Verification Program for Raw Meat and Poultry Products
- FSIS Directive 10,240.4[3], Verification Activities for the *Listeria monocytogenes* (*Lm*) Regulation and the Ready-to-Eat (RTE) Sampling Program

[1] FSIS Directive 10,010.1 also available in Arabic, Chinese, Spanish, and Vietnamese translations.
[2] FSIS Directive 10,250.1 also available in Arabic, Chinese, Spanish, and Vietnamese translations.
[3] FSIS Directive 10,240.4 also available in Arabic, Chinese, Spanish, and Vietnamese translations.

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Table 1: Frequency of FSIS Government Microbiological Sampling and Testing for Raw Meat and Poultry Products

Product Type or Production Class	Pathogen Target(s)	Test Portion	Frequency (# of samples per establishment)[4]			
			Very Small Est (<1,000 lbs/day)	Small Est (1,001-50,000 lbs/day)	Medium Est (50,001-250,000 lbs/day)	Large Est (>250,000 lbs/day)
Steer/heifer/cow/bull carcass[5]	*Salmonella*	3-site sponge (300 cm^2 total); with hydrate		*See footnote 5*	*See footnote 5*	*See footnote 5*
Raw ground beef/veal	*E. coli* O157:H7	325 grams	1/month	2/month	3/month	4/month
	Salmonella	325 grams	1/month	2/month	3/month	4/month
Raw beef/veal manufacturing trimmings	*E. coli* O157:H7	Entire N60 sample (~325-375grams)	1/month	2/month	3/month	4/month
	Salmonella	Entire N60 sample (~325-375grams)	1/month	2/month	3/month	4/month
	Non-O157 STEC (O26, O45, O103, O111, O121, and O145)	Entire N60 sample (~325-375grams)	1/month	2/month	3/month	4/month
Raw beef/veal bench trimmings	*E. coli* O157:H7	Entire N60 sample (~325-375grams)	1/month	2/month	3/month	4/month
	Salmonella	Entire N60 sample (~325-375grams)	1/month	2/month	3/month	4/month
Raw beef/veal components other than trim (e.g., head meat, cheek meat, weasands, hearts)	*E. coli* O157:H7	325 grams	1/month	2/month	3/month	4/month
	Salmonella	325 grams	1/month	2/month	3/month	4/month

[4] The volume production ranges listed are based on pounds of a specific product type or process category produced per day by a single establishment. Alternatively, the CCA may choose to use the volume of products that are exported to the US to categorize establishments eligible to export in order to determine the appropriate frequency for testing. If the frequency of sampling is based on volume of products exported to the US, the corresponding volume ranges would be: Very Small Est (<20,000 lbs./month exported to the US), Small Est (20,001-100,000 lbs./month exported to the US), Medium Est (100,001-5,000,000 lbs./month exported to the US), Large Est (>5,000,000 lbs./month exported to the US).

[5] FSIS suspended official government verification of compliance with the *Salmonella* performance standards in beef (steers/heifers and cows/bulls) and swine (market hog) carcasses (2011), as well as in raw ground beef (2014), because the percentage of positive findings was very low in carcasses and because of methods changes in ground beef. CCAs need to provide their performance standard criteria for evaluation of *Salmonella* results, including how the CCA assesses on an ongoing basis whether certified establishments meet performance standards for carcasses (cow/bull, steer/heifer, and swine) and raw ground beef. Alternatively, if the CCA has been following the FSIS standards but wants to make changes to its program, CCAs can request an individual sanitary measure (ISM) determination and submit data to support that their measure provides an equivalent level of public health protection.

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Product Type or Production Class	**Pathogen Target(s)**	**Test Portion**	**Frequency (# of samples per establishment)[4]**			
			Very Small Est (<1,000 lbs/day)	**Small Est (1,001-50,000 lbs/day)**	**Medium Est (50,001-250,000 lbs/day)**	**Large Est (>250,000 lbs/day)**
Market swine carcass[5]	*Salmonella*	3-site sponge (300 cm^2 total); with hydrate		*See footnote 5*	*See footnote 5*	*See footnote 5*
Broiler carcasses	*Salmonella*	30mL of 400mL rinsate	1/month	2/month	2/month	5/month
	Campylobacter[6]	30mL of 400mL rinsate	1/month	2/month	2/month	5/month
Turkey carcasses	*Salmonella*	2-site sponge (100 cm^2 total); with hydrate	1/month	3/month	5/month	5/month
	Campylobacter[6]	2-site sponge (100 cm2 total); with hydrate	1/month	3/month	5/month	5/month
Raw comminuted chicken	*Salmonella*	325 grams		5/month	5/month	5/month
	Campylobacter[6]	30mL of 325 gram resuspension in 1625 mL BPW		5/month	5/month	5/month
Raw comminuted turkey	*Salmonella*	325 grams		3/month	5/month	5/month
	Campylobacter[6]	30mL of 325 gram resuspension in 1625 mL BPW		3/month	5/month	5/month
Raw chicken parts	*Salmonella*	30mL of 400mL rinsate		1/month	1/month	4/month
	Campylobacter[6]	30mL of rinsate		1/month	1/month	4/month

[6] In August 2018, FSIS began using an enrichment-based method to analyze poultry samples for *Campylobacter* due to the low sensitivity of the direct plating analytical method. Therefore, at this time, FSIS is not currently assessing *Campylobacter* performance in poultry establishments and is currently revising the *Campylobacter* performance standards based on the enrichment method.

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Table 2: Frequency of FSIS Government Microbiological Sampling and Testing for Ready-to-eat (RTE) Meat and Poultry Products

Type of Sample Collected	Pathogen Target(s)	Test portion	Frequency[7] (# of samples per establishment per year)	
			Post-lethality Exposed Products	Not Post-lethality Exposed Products
RTE Products	*Listeria monocytogenes*	25 gram	7	3
	Salmonella	325 gram	7	3
Food Contact Surface and Non-Food Contact Environmental Surface	*Listeria monocytogenes*	Entire sponge (with hydrate)	Once every 4 years and should include a minimum of: - 3 units[8] in large establishments (>500 employees) - 2 units in small establishments (10-500 employees) - 1 unit in very small establishments (<10 employees)	

[7] If an establishment produces both post-lethality exposed and not post-lethality exposed ready-to-eat products, sampling frequency should be in accordance with post-lethality exposed RTE products.

[8] 1 unit consists of 5 product samples, 10 food contact surface samples, and 5 non-food-contact surface samples

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Table 3: Frequency of FSIS Government Microbiological Sampling and Testing for Pasteurized Liquid or Dried Egg Products

Product Type	Pathogen Target(s)	Test Portion	Frequency (# of samples per establishment)
Liquid/frozen egg whites with or without added ingredients	*Listeria monocytogenes*	25 mL or 25grams	1 sample/month
	Salmonella	100 mL or 100 grams	1 sample/month
Liquid/frozen whole eggs or yolks (<2% or no added ingredients)	*Listeria monocytogenes*	25 mL or 25grams	1 sample/month
	Salmonella	100 mL or 100 grams	1 sample/month
Liquid/frozen whole eggs, yolks, or whole egg/yolk blends (>2% added ingredients other than salt/sugar)	*Listeria monocytogenes*	25 mL or 25grams	1 sample/month
	Salmonella	100 mL or 100 grams	1 sample/month
Liquid/frozen whole eggs, yolks, or whole egg/yolk blends (>2% added salt or sugar)	*Listeria monocytogenes*	25 mL or 25grams	1 sample/month
	Salmonella	100 mL or 100 grams	1 sample/month
Dried yellow egg products	*Listeria monocytogenes*	25grams	1 sample/month
	Salmonella	100 grams	1 sample/month
Spray-dried egg whites with or without added ingredients	*Listeria monocytogenes*	25grams	1 sample/month
	Salmonella	100 grams	1 sample/month
Pan-dried egg whites	*Listeria monocytogenes*	25grams	1 sample/month
	Salmonella	100 grams	1 sample/month