

1- SALMONELLA SAMPLING PLAN

PURPOSE:

To determine the presence of *Salmonella* in processed foods and soils/water used for the growth of foods intended for human consumption.

APPLICABILITY:

This sampling plan is applicable to the inspection of either a continuing series of production lots or to isolated lots consisting of an identifiable collection of process units (cans, bags, packages, or similar units). Additionally, the soil plan is for use during on-farm investigations requiring the sampling of soil for the presence of *Salmonella*. This plan is for use by FDA for regulatory purposes.

FOOD CATEGORIES:

Foods are listed in three categories based on the number of *Salmonella* hazards and whether a food is to be consumed by infants, the aged, or infirm.

The three defined *Salmonella* Hazards of foods are:

1. The food or an ingredient of the food is a significant potential source of *Salmonella*;
2. The manufacturing process does not include a controlled step that destroys *Salmonella*; and
3. The food has significant potential for microbiological growth if "abused" in distribution or by consumers.

Classification of Foods:

Foods have been classified into three food Categories for regulatory sampling purposes. The foods are listed in the Categories by Product Code sequence.

NOTE: For products not listed, check with your supervisor. The District will request categorization from the Office of Field Programs/Center for Food Safety and Applied Nutrition (HFS-600), or, when time is of essence, the District will make the categorization and obtain later concurrence from CFSAN.

Category I

This includes all foods that would normally be in Category II except that they are intended for consumption by the aged, the infirm, and infants.

Category II

This includes the foods that would not normally be subjected to a process lethal to *Salmonella* between the time of sampling and consumption. Examples are as follows:

PRODUCT CODE	FOOD ITEM
03	Bread, rolls, buns, sugared breads, crackers, custard and cream filled sweet goods
05	Breakfast cereals, ready to eat
07	Pretzels, chips and specialty items
09	Butter and butter products; pasteurized milk and raw fluid milk and fluid milk products for consumption; pasteurized and unpasteurized concentrated liquid milk products for consumption; dried milk and dried milk products for consumption
12	Cheese and Cheese products
13	Ice cream from pasteurized milk and related products that have been pasteurized; raw ice cream mix and related unpasteurized products for consumption.
14	Pasteurized and unpasteurized imitation dairy

	products for consumption
15	Pasteurized eggs, egg products from pasteurized eggs; unpasteurized eggs and egg products from unpasteurized eggs for consumption without further cooking
16	Canned and cured fish, vertebrates; other fish products; fresh and frozen raw oysters and raw clams, shellfish and crustacean products; smoked fish, shellfish and crustaceans for consumption
17	Unflavored gelatin
20-22	Fresh, frozen and canned fruits and juices, concentrates and nectars ; dried fruit for consumption; jams, jellies, preserves and butters
23	Nuts and nut products for consumption
26	Oils consumed directly without further processing and oleomargarine
27	Dressings and condiments (including mayonnaise) salad dressing and vinegar
28	Spices including salt; flavors and extracts
29	Soft drinks and water
30	Beverage bases
31	Coffee and tea
33	Chewing gum and candy
34	Chocolate and cocoa products
35	Pudding mixes not cooked prior to consumption, gelatin products
36	Syrups, sugars and honey
38	Soups
39	Prepared salads

Category III

This includes the following foods that would normally be subjected to a process lethal to *Salmonella* between the time of sampling and consumption. Examples are as follows:

PRODUCT CODE	FOOD ITEM
02	Whole grain, processed grain and starch products for human use
04	Macaroni and noodle products
16	Fresh and frozen fish; vertebrates (except that eaten raw); fresh and frozen shellfish and crustaceans (except raw oysters and raw clams for consumption); other aquatic animals (including frog legs)
24	Fresh vegetables, frozen vegetables, dried vegetables, cured and processed vegetable products normally cooked before consumption
26	Vegetable oils, oil stock and vegetable shortening
35	Dry dessert and pudding mixes that are cooked prior to consumption
37	Frozen dinners, multiple food dinners
45-46	Food chemicals (direct additives)

SAMPLE COLLECTION

Each sub will consist of a minimum of 100 g (approx. 3.53 oz). The usual subsample is a consumer size container of a product. Subsamples should be obtained at random to insure that the total sample is representative of the lot. When a lot consists of identifiable subsamples (e.g., different codes), sub samples should be obtained from subsamples in the proportion that the subsamples are to the whole lot.

More than one subsample may be collected from large institutional or bulk containers when the number of sub samples required exceeds the number of containers in the lot. A subsample will consist of more than one container when the lot consists of containers smaller than 100 g (e.g., 4 - 25 g containers is a subsample).

When a sample is collected by transferring it to sample containers, a sample control must be submitted which consists of an empty sample container that is exposed to the same conditions under which the sample is collected. See IOM 4.3.6.2 and 4.3.6.5 on controls. Use aseptic technique when sampling from bulk containers.

SAMPLE SIZE

The following sample sizes also apply to the finished product portion of in-line samples when analyzed for Salmonella. Each subsample will consist of at least 100 gm (approx 3.5 oz).

The 702(b) [21 U.S.C. 372(b)] portion is included in these subsamples, however all subs must be collected for proper analysis. Do not reduce the number of subsamples when collecting import samples.

<u>FOOD CATEGORY</u>	<u>NUMBER OF SAMPLE UNITS (SUBS)</u>
I	60
II	30
III	15

SAMPLE SUBMISSION

Submit all samples collected to your district's microbiological servicing laboratory unless directed otherwise by your supervisor or assignment. See IOM 4.5.5.2.

FARM INVESTIGATIONS – SOIL AND WATER SAMPLES

Soil Samples

When conducting an investigation at a farm that was implicated as the source of produce contaminated with *Salmonella*, and the crop is exposed to soil or water splash from the soil, such as leafy greens, cantaloupes, or cucumbers, soil samples may yield important information as to how the produce was contaminated, especially if a soil amendment such as animal manure or compost was used, or if the crops on that field were rotated and animals grazed on the land previously.

Unless specific instructions were provided by the office issuing the assignment, generally 5 sub samples are collected per field, one from the growing area on each corner, and one near the center. Additional samples may be collected based on observations, such as animal incursion, areas where water may drain, portions of the field susceptible to road dust or runoff, etc. Each field should be issued a separate sample number for ease of identification and review of data. A 1000 ml whirlpack should be filled with soil from a depth of 1 to 3 inches using a sterile scoop and double bagged. Take a photograph of each area where samples are collected and indicate the location and subsample number on a diagram of the field.

Soil samples should be submitted to the lab at 4°C (39°F) or below.

Water Samples

If specialized equipment such as a peristaltic pump are not available, collect water in a sterile, 1000 ml Nalgene sample bottle from wells and surface water. When collecting a surface water sample, a sterile pipette with a re-usable suction bulb is recommended. Using the end of the pipette, stir the surface of the sediment until the water becomes cloudy and then collect this water. *Salmonella* may form a biofilm or colonize sediments and be recovered well past the outbreak period.

Water samples should be submitted to the lab at 4 °C (39 °F) or below.

Environmental samples will be submitted as Investigational Samples (INV).