

Article 9. Sampling & Handling Methods

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1. Meaning of Sampling

Sampling shall be scientifically performed in securing its efficiency in the selection of test target, sampling, handling, transportation/test etc. because food-hygiene observers collect sample from inspection target and performs its test about both the suitability to standard specification and its safety against contaminants and then may take administrative action according to the test results. Therefore, because it has important purpose to collect sample and require its test to food-hygiene test agency, the food-hygiene observers shall perform their duty with full knowledge about sampling & handling methods.

2. Definition

- 1) Sample : Means material collected from test target.
- 2) Sample Unit : Means a quantity of food at a time collected as a composition unit of sample.
- 3) Test Target : Means one target which sample is collected as the same type of food after manufacturing, processing and packaging food at the same condition. In the event of farm forest/ livestock/ marine products, material manufactured arrived transported at the same time can be regarded as one test target. However, in case of requiring test about its contents amount, it cannot be regarded as one test target.
- 4) Bulk : Means test target, which is not packaged in order to distribute and sell it by itself to final consumer.
- 5) Particle Food : Means food with small particles, which shall be collected by utensil or container etc.
- 6) Unit Food : Means food etc., which are collected by piece even though utensil, container or packaging are not used.
- 7) Bundle Food : Means spinach bundle or aralia shoots bundle etc., which can be collected in itself by tying several things into bundle or retail packaging in order to sell it by itself to final consumer.

3. General Guidance of Sampling

- 1) Sampling shall be performed by a person specified in Article 20 of Food Sanitation Act and Article 5 of Enforcement Decree of Food Sanitation Act.
- 2) Sampling shall be performed from test target by using Section 8. Random Table Method of Article 12. Appendix Table in order to have the representative characteristics of test target. However, when the random table method can not be used unavoidably, collector can select and take sample from test target.

- 3) Minimum quantity of sample shall be collected so that it shall represent overall test target in consideration of test purpose and test items etc.
- 4) Sample is, generally, collected from test target with same lot number, manufacture date, expiration date. After understanding several points such as product class, food type, manufacturing company, symbol, export country, export date, arrival date, cargo vessel, transportation vehicle, cargo train, and packaging type & appearance etc. and considering food characteristics and test purpose, sampling shall be performed.
- 5) When sample is collected, test target shall be not damaged. In case of collecting sample before packaging it or after opening packaged test target, foreign matter shall be not adulterated and sample shall be not contaminated by microorganism.
- 6) Collected sample shall be sealed so that it shall be able to be opened only by breakdown.
- 7) In the event that usage, shape, size or product name are different even though the material & background color in utensil or container packaging are the same, some representative products among them can be a sample. However, in case of a set with different material & background color, sample can be collected by set as a selling unit.

4. Technique in Sampling & Handling

In sampling, sample's physical chemical biological state such as test purpose, the class & quantity of food, possibility of contamination, homogeneity etc. of target food should be considered.

1) Sampling Technique

(1) In case of heterogeneous test food

- ① It is generally necessary to collect lots of samples when sample is heterogeneous. In case of collecting a little quantity of sample because of test efficiency and economical efficiency, sample can be collected from suspected target after totally considering its appearance and storage condition etc.
- ② Product, which is not homogeneous because of its characteristics such as sedimentation floating etc., shall be wholly treated to be as homogeneous as possible and then sample shall be collected so that it has representative characteristics.

(2) Homogeneity judgment according to test Items

Sample homogeneity is dependent on test items. Because it is regarded that food components such as heavy metal and food additives etc, be homogeneous even though it is judged to be heterogeneous in the freshness test of an test food, sample can be collected.

(3) Sampling of packaged food

- ① Sample of food, which is circulated in container and packaging such as can, bottle, box etc., shall be collected in itself, not to be as opened as possible.
- ② For food which is put into large container and packaging, some of food to represent whole test target can be collected as sample.

(4) Bulk sampling of vessel

- ① Sampling shall be performed on the vessel or before putting product into the silo of bonded area. However, it need not be collected as such in case of unavoidable situation.
- ② In the event that farm, forest, livestock and marine products with the same product name, of which products are loaded to same mother vessel, are distributed to be loaded to several vessels, whole products are regarded to be one target and then sample can be collected at one vessel randomly selected by using the random table

(5) Sampling of refrigerated & frozen food

In case of sampling of refrigerated or frozen food, sample shall be collected as its status is maintained.

(6) Sampling to Require Microorganism test

- ① When sample is collected, transported, or stored, airtight container/package shall be used so that its sampling state can be maintained.
- ② When a portion of food is collected as sample, it shall be aseptically performed by using sterilized utensil/container etc.
- ③ Sample shall be, except as unavoidable situation, collected from normally stored and circulated products.
- ④ Sample shall be collected from completely packaged products, except as sampling cases due to relevant information & special collection plan.

(7) Sampling of gas-generation Food

- ① In the event that test result is affected by gas which is generated at normal temperature from sample, one packaged product shall be collected in itself as sample unit, not to open packaging.
- ② However, when a portion of food is collected as sample, the collected sample shall be immediately sealed and cooled as soon as possible so that test result shall not be affected.

(8) Paste or syrup food and so on

- ① In the event that sampling is difficult because of high viscosity of sample, it can be collected in reducing its viscosity by proper method such as heating in a range not to affect test result.

- ② In the event that normal method cannot make sample homogeneous because it is high viscous and heterogeneous, sample is collected after being treated by using utensil to make it homogeneous by a method not to affect test result.

(9) Cautions in Sampling according to test Items

① Moisture

In order to prevent moisture content from being changed due to evaporation or absorption, sample is put into airtight container and then the temperature change of sample shall be minimized.

② Acid value & peroxide value

In order to prevent the oxidation of fat from being promoted due to light or temperature etc., sample is put into airtight container, in which light is intercepted and the change in both sample volume of collection container and sample temperature shall be minimized.

2) Recording of Sampling Statement

Food-hygiene surveillant shall submit the relevant sample with 9. Sampling Statement of Article 12. Appendix Table in Sampling. However, in the event that it is allowed that the omission of sampling statement does not affect standard specification test, the observer need not submit it as such.

3) Sample Transportation Technique

- (1) Collected sample shall be transported to test room in itself so that it is not contaminated, broken, damaged, thawed and deformed.

- (2) In case of transporting sample in a long distance or by public vehicle, it shall be specially attentively packaged not to be damaged.

(3) Transportation of frozen sample

- ① Frozen sample shall be transported in itself.

- ② In case of not utilizing freezer, sample can be transported in maintaining its frozen state by dry ice.

(4) Transportation of refrigerated sample

Cold sample shall be transported in maintaining its temperature. In maintaining its refrigeration temperature by using ice, please be cautious so that sample should be not contaminated by water melted from ice. In case of using dry ice, please be cautious so that sample is not frozen.

(5) Transportation of Sample for Microorganism test

- ① Sample with the possibility of spoilage deterioration

Sample, which requires microbiological test, shall be aseptically collected into sterilized container and immediately(within 4 hours) transported to Food Hygiene test Agency in maintaining its cold-storage temperature.

When refrigeration temperature cannot be maintained or sample cannot be immediately transported because of unavoidable situation, it shall be re-collected or its test is requested to Food Hygiene test Agency after recording its collection date & status.

② Sample without the possibility of spoilage deterioration

It is not always necessary to transport sample at refrigeration temperature without the possibility of spoilage deterioration during transportation even though it requires microbiological test. However, please be cautious to the contamination and the damage of sample & packaging etc.

③ Caution when using ice etc.

In using ice etc, please be cautious so that sample is not contaminated by water melted from ice.

(6) Transportation of gas-generation sample

When a portion of food is collected as sample, it shall be transported in properly cold or frozen state.

5. Sampling Utensil & Container

- 1) Sampling utensil & container shall be suitable to sampling purpose because of various class, shape, and container/packaging of sample.
- 2) They shall be suitable to Article 7. Standard and specification of Utensil, Container and Packaging.
- 3) Convenient utensil & container shall be used in transportation, cleaning, and sterilization. Parts, which are directly contacted with sample, of utensil & container to collect sample for microbiological test, shall be sterilized.
- 4) Utensil & container, which are contacted directly with sample, shall not affect test result.
- 5) Class of Utensil & Container for Sampling

(1) Sampling Utensil

Pincette, scissors, knife, can opener, wooden hammer, electric saw or saw, grain sampler, dryer, pipette, cutter, pump or tube for liquid sampling, scoop, funnel etc.

(2) Sampling Container/Packaging

Sampling bag(large, medium, small), sampling bottle(jar) etc.

(3) Sterilization Instrument

Alcohol lamp, alcohol, cotton etc.

(4) Others

Tape, icebox, camera, writing materials etc.

6. Sampling Method by Food Type

1) Marine Products

- (1) Small marine products (body weight of marine animal is less than about 500 g.): the number of animals randomly collected is 10 and then each edible part of about 30 g is taken and homogenized

and then used as sample. If edible part of one animal is below about 30 g, some animals, of which total edible parts are weighed to about 300 g, are collected. Shellfish corresponds to small marine products.

- (2) Medium marine products (body weight of marine animal is not less than 500 g and below 1.5 kg): the number of animals randomly collected is 5 and then each edible part of about 60 g is taken and then used as sample.
- (3) Large marine products (body weight of marine animal is not less than 1.5 kg): the number of animals randomly collected is 3 and then each edible part of about 100 g is taken and then used as sample.

2) Farm and Forest Products

(1) Particle Raw Material

① Sampling method

Sample is prepared by selecting & mixing materials from no less than 6 test targets.

② Sampling method of food packaged by gunny bag/box

Sample is collected by randomly selecting gunny bag/box using random table.

③ Sampling method on the vessel

Sample is collected by each sample unit as long as moving into zig-zag direction. However, in the event that one test target contains several sections, sample can be collected by randomly selecting sections using random table.

④ Sampling method on conveyor belt

Sample is periodically(hour, minutes etc) collected on conveyor belt.

⑤ Sampling method in vehicle & train

Sample is collected as long as moving into zig-zag direction. However, in the event that one test target contains several vehicles & trains, sample can be collected by randomly selecting section using random table.

(2) Unit Raw Material

① Sampling method

Sample is prepared by selecting & mixing materials from no less than 6 test targets. However, in the event that the weight of one sample is not less than collected weight, one sample can be used as sample unit.

② Sampling method of food packaged by gunny bag/box

Sample is collected by randomly selecting gunny bag/box using random table.

③ Collection Method of Bulk Sample

In case of sample loaded in bulk, each sample unit is collected from surface and middle point.

(3) Bundle Raw Material

① Sampling method

Sample is prepared by selecting & mixing materials from no less than 6 test targets. However, an test target, of which one bundle is not more than sample unit, is collected by one bundle. Some

parts of test target, of which one bundle is not less than sample unit, can be applied as some parts of one bundle is sample unit.

② Sampling method of food packaged by gunny bag, box

Sample is collected by randomly selecting gunny bag, box using random table.

③ Collection method of bulk sample

In case of sample loaded in bulk, each sample unit is collected from surface and middle point.

(4) Others

① Application range

In the event that physical shape or size of farm/forest products don't come under particle raw material, unit raw material, and bundle raw material, this sampling covers all vegetable raw foods, which are stated in 1) Vegetable Raw Material of 3. Classification of Food Raw Material described in Article 1. General Provision.

② Sampling method

Sample is prepared by selecting and mixing materials from no less than 6 test targets.

③ Sampling method of food packaged by gunny bag/box

It is the same as ② Sampling method of food packaged by gunny bag/box of (1) particle raw material in 2) Farm and Forest Products in 6. Sampling Method Classified by Food Class.

④ Collection method of bulk sample

It is the same as ③ Collection method of bulk sample of (2) Unit Raw Material in 2) Farm and Forest Products, 6. Sampling Methods Classified by Food Class.

⑤ Sampling method on the vessel

It is the same as ③ Sampling method on the vessel of (1) Particle Raw Material, 2) Farm and Forest Products in 6. Sampling Method Classified by Food Class.

⑥ Sampling method on conveyor belt

It is the same as ④ Sampling method in conveyor belt of (1) Particle Raw Material, 2) Farm and Forest Products in 6. Sampling Method Classified by Food Class.

⑦ Sampling method in vehicle & train

It is the same as ⑤ Sampling method in vehicle & train of (1) Particle Raw Material, 2) Farm and Forest Products in 6. Sampling Method Classified by Food Class.

3) Food/Food Additive/Utensil/Container/Package/Livestock Products

(1) Particle Food .

① Sampling method

It is the same as ① Sampling method of (1) Particle Raw Material in 2) Farm and Forest Products of 6. Sampling Method Classified by Food Class.

② Sampling method of food packaged by gunny bag/box

It is the same as ② Sampling method of food packaged by gunny bag/box of (1) Particle Raw Material 2) Farm Forest Products in 6. Sampling Method Classified by Food Class.

(2) Unit Food/ Food Additive, Utensil/Container/Package

① Sampling Method

It is the same as ① Sampling method of (2) Unit Raw Material, 2) Farm and Forest Products in 6. Sampling Method Classified by Food Class.

(3) Livestock Products

① Sampling Method

It is the same as ① Sampling method of (2) Unit Raw Material, 2) Farm and Forest Products in 6. Sampling Method Classified by Food Class.