

The background is a solid orange color with a complex, abstract pattern of overlapping geometric shapes in various colors including yellow, green, brown, and black. The shapes include rectangles, circles, and irregular polygons, some of which are layered on top of each other, creating a sense of depth and movement. A large, light green oval is positioned in the lower right quadrant, serving as a backdrop for the chapter title.

# CHAPTER 7

## Sampling and Analysis

Section 47 of the Food Safety & Standards Act, 2006, Rule 2.4 of Food Safety & Standards Rule, 2011 and Food Safety & Standards (Laboratory & Sample Analysis) Regulations, 2011 provides with the procedure of sampling and analysis along with sample size of various articles of food.

## A. Food Sampling

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Food sampling is a process of drawing a sample/ a small portion of food which is a representative of a population/ lot of a food for testing, analysing, intended to show the nature and quality of the whole specimen. A food sample is normally drawn to check the safety and standards of the food product. By safety it is meant that whether the ingredients, additives used are safe and free from any kind of contaminants and adulteration and by standards it is meant that the ingredients and additives used are as per the standards or regulations of the said product and additives used are within the limits prescribed.

## B. Objectives of Food Sampling

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The main objectives of food sampling should be borne in mind while deciding sampling programmes and these objectives may help to formulate priorities for sampling activity.

### (a) Protecting public health.

The most important objective of food sampling is to protect public health. A significant proportion of sampling activity undertaken will, in some way, have a bearing on its wide-reaching objective. Specifically, sampling to detect naturally occurring toxins, contaminants, use of unsuitable ingredients, excessive addition of additives and failure to declare the presence of ingredients to which a consumer may be allergic will all contribute to this objective.

### (b) Detecting fraudulent activities

Consumers can sometimes end up not getting what they are paying for as a direct result of deliberate activity to defraud. One area which is becoming increasingly important to consumers is comprehensive and accurate labelling. For many activities, sampling and analysis will be the only way in which fraud or mislabelling can be detected; this is particularly true of imported food sampling where inspection of the manufacturing process is not an option.

### (c) Giving customers sufficient information to make informed choices

Consumers are looking increasingly to product labelling to help them make informed choices about what products to buy. Such labelling information ranges from details that may provide guidance on the quality of the food (e.g. the proportion of key ingredients) to information on the presence or otherwise of substances that a consumer may wish to avoid, for ethical or health reasons for instance. Sampling is a vital tool to help to check the veracity and accuracy of this labelling information.

### (d) Ensuring that food standards are maintained

Sampling is an essential tool to check whether foods meet the various statutory standards, the absence of which would be likely to result in debasement of these foods.

### (e) Informing the enforcement approach

Sampling is a key element of enforcement action. It can help inform any inspection activities either as part of, or associated with, visits to establishments. It can also identify food or feed sectors or products where enforcement attention is required. Sampling is also of use during the investigation of complaints about food, for example follow-up sampling to establish if the cause of the complaint was an isolated incident.

### (f) Providing product quality advice to the producer

Informing food producers or retailers of sampling results could highlight issues that they were not aware of, thus allowing them to take prompt action. Similarly, enforcement sampling alerts industry that products are being monitored for the purpose of consumer protection and legal compliance.

### (g) Promoting fair trade and deterring bad practice

Legitimate businesses need assurance they will not be undermined by competitors who cut corners or commit fraud. Businesses and consumers alike need to know where they stand. It is, therefore, important that food law is effective and is enforced efficiently and consistently. Fair and effective enforcement helps honest and diligent food and feed businesses and is supported by industry as a whole.

## C. Types of Samples

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Broadly there are two types of samples drawn by the Food Safety Officers in our country:

- (a) **Legal Sample:** The enforcement of food law is primarily the responsibility of Food Safety Officials of the State/UTs. To deliver a well- balanced enforcement service and effectively protect consumers, state authorities need to have effective sampling policies, procedures and programmes in place. Effective routine sampling is an essential element in delivering a well balanced enforcement service and should therefore feature in the enforcement activity of Food Authorities. Legal samples are those samples, where after analysis, if an adverse result is received legal action shall be initiated along with relevant enforcement action for quick relief. In other words these samples can be used for prosecution. Legal samples are drawn as per the sampling procedure detailed in the FSS Act, 2006, rules & Regulations made there under and the entire procedure is to be strictly followed by the Food Safety Officers.
- (b) **Surveillance Sample:** The samples drawn for purposes of surveillance, survey and research, and cannot be not be used for prosecution. This may be a ongoing process and is normally initiated by the Food Authority. The policy, plan and programme all may be formulated by the Food Authority and is normally forwarded to the State Authorities for drawing samples as per the guidelines enumerated in the plan. The surveillance sampling may also be done by the Central Authorities or jointly by the Central and State Authorities. This type of sampling is done to monitor the safety and quality of food manufactured, sold or imported in the country.

## D. Circumstances for drawing Sample

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- (a) When a Food Safety Officer has reason to believe that a food article is being manufactured, stocked or sold or exhibited for sale in contravention of the provisions of the Act, or rules and regulations framed there under.
- (b) Consumer complaints.
- (c) Food Hazard Warnings and food suspected of contamination generally

- (d) Changing local concerns
- (e) Additional national surveillance programmes
- (f) New businesses
- (g) New products or manufacturing practices in existing businesses
- (h) Observation during factory inspections

## **E. Procedure for taking sample and manner of sending it for analysis -**

The Food Safety Officer is empowered for taking sample of food for analysis under clause A of Sub Section 1 of Section 38 and Section 47 (except 47 (5)) of the Act, and has to follow and abide by the procedure specified hereunder;-

This procedure is to be followed only in cases of procuring Legal Samples.

- (a) Make arrangements for one or more witnesses at the time of lifting of the samples
- (b) Take the signatures from the witnesses in all the forms and documents prepared
- (c) Serve the notice in Form V A to the business operator then and there
- (d) In case the food business operator discloses that the product has been obtained from the manufacturer, the distributor or supplier, a notice has also to be given to such manufacturer, distributor or supplier,
- (e) In case where the sample is drawn from an open container, the person drawing the sample will also draw a sample from a container in original condition of the same article bearing the same declaration, if such container is available, and intimate the same to the Food Analyst.
- (f) Where a Food Safety Officer or the purchaser takes a sample of an article of food for analysis, he has to pay, the cost of the sample, to the person from whom the sample is taken, calculated at the rate at which the article is sold to the public.
- (g) Suitable container is to be used while drawing samples and which has to be closed to prevent leakage, evaporation or to avoid entrance of moisture in case of dry substance and shall be carefully sealed. If a sealed package marketed by the manufacturer/Food Business Operator is taken as sample, further sealing in separate containers will not be required.
- (h) All bottles or jars or other containers containing the samples for analysis is to be properly labelled and the parcel is to be properly addressed. The label on any sample of food sent for analysis has to bear
  - (I) Code number of the sample
  - (ii) Name of the sender with his official designation
  - (iii) Date and place of collection
  - (iv) Nature of articles being sent for analysis
  - (v) Nature and quantity of preservative, if any, added to the sample
- (i) The samples drawn will be packed and sealed in the manner prescribed hereunder :
  - (i) Sample has to be divided into four parts or take four already sealed packages and mark and seal or fasten up each part in such a manner as its nature permits and take the signature or thumb impression of the person from whom the sample has been taken on the label mentioned above.

- (ii) The stopper/cap has to first be securely fastened so as to prevent leakage of the contents in transit
  - (iii) The bottle, jar or other container is then completely wrapped in fairly strong thick paper. The ends of the paper is to be neatly folded in and affixed by means of gum or other adhesive.
  - (iv) A paper slip of the size that goes round completely from the bottom to top of the container, bearing the signature of the Designated Officer or any officer authorized by Food Safety commissioner and code number of the sample, is to be pasted on the wrapper. The signature or thumb impression of the person from whom the sample has been taken, is to be affixed in such a manner that the paper slip and the wrapper both carry a part of this signature or the thumb impression
  - (v) In case the person from whom the sample is taken refuses to affix his signature or thumb impression, the signature or thumb impression of one or more witnesses is to be taken in the same manner
  - (vi) Provided further that in case the paper slip containing the signature of the Designated Officer is of such a size that it does not cover completely from the bottom to the top of the container, the Food Safety Officer will affix additional sheet/s of paper to the slip containing the signature of the Designated Officer so as to cover the container completely and the Food Safety Officer will affix his signature on each of the joints for the purpose of identification. Further where the purchaser or an Authorized Officer draws the sample no such paper slip is be required to be affixed.
  - (vii) The paper cover is to be further secured by means of strong twine or thread both above and across the bottle, jar or other container and the twine or thread shall then be fastened on the paper cover by means of sealing wax on which there shall be distinct and clear impression of the seal of the sender, of which one is to be at the top of the packet, one at the bottom and the other two on the body of the packet. The knots of the twine or thread are to be covered by means of sealing wax bearing the impression of the seal of the sender.
- (j) The Food Safety Officers will dispatch the containers of the samples in the following manner:
- (I) the sealed container of one part of the sample for analysis along with memorandum in Form VI is sent in a sealed packet to the Food Analyst under appropriate condition to retain the integrity of the sample.
  - (ii) the sealed container of the second and third parts of the sample and two copies of memorandum in Form VI is sent to the Designated Officer by any suitable means and
  - (iii) if requested by the Food Business Operator, the sealed container of the remaining fourth part of the sample and a copy of memorandum in Form VI is sent to an accredited laboratory along with fee prescribed by the Authority, under intimation to the Designated Officer, The payment is made by the Food Business Operator through Bank draft or online transfer or treasury chalan or any other suitable means as specified by the Designated Officer. The Accredited lab where the Food Safety Officer will send the sample, should be within the state or the neighbouring state wherever available. The fourth part is deposited with Designated Officer if Food business Operator does not request to send the sample to an accredited laboratory.
  - (iv) for lifting a sample for testing microbiological parameters, the method of lifting sample, type of container, temperature to be maintained, method of transportation and any other condition to maintain the integrity of the sample shall be notified by the Food Authority from time to time.
- (k) The Food Safety Officer has to send to the Food Analyst to whom the sealed container of first part of the sample was sent, a copy of the memorandum and specimen impression of the seal used to seal the packet and the same has to be sent forthwith.

- (l) The Food Safety Officer or the Authorized Officer, while taking sample for the purpose of analysis under the provisions of the Act except in the case where the sample is meant for microbiological testing/ analysis, may add to the sample, a preservative as may be prescribed from time to time in the regulations for the purpose of maintaining it in a condition suitable for analysis.
- (m) Whenever any preservative is added to a sample, the nature and quantity of the preservative added has to be clearly noted on the label to be affixed to the container.
- (n) The preservative used in the case of samples of any milk (including toned, separated and skimmed milk), standardized milk chhana, skimmed milk chhana, cream, ice-candy, dahi, khoa or khoa based and Paneer based sweets, such as Kalakand and Burfi, Chutney and prepared foods, gur prepared coffee and tea in liquid or semi-liquid form shall be the liquid commonly known as "formalin", that is to say, liquid containing about 40 per cent of formaldehyde in aqueous solution in the proportion of 0.1 ml. (two drops) for 25 ml. or 25 grams.
- (o) In case of samples of ice-cream and mixed ice-cream, the preservative used is liquid commonly known as formalin, that is to say, a liquid containing about 40 percent of formaldehyde in aqueous solution in the proportion of 0.6 ml. for 100 ml. or 100 gms.
- (p) In case of the unspecified products, the quantity drawn is determined in consultation with the Food Analyst.
- (q) The quantity of sample of food to be sent to the Food Analyst / Referral lab for analysis is specified in regulations by the Food Authority.

**Explanation** - Foods that are sold in packaged condition (sealed container or package) is sent for analysis in its original condition without opening the package as far as practicable, to constitute approximate quantity along with original label. In case of bulk packages, wherever preservatives are to be added as per the requirement under these rules, the sample is to be taken after opening sealed container or package in the presence of the Food Business Operator or in case of his refusal, in the presence of one or more witnesses and the contents of the original label is also be sent along with the sample for analysis. However, such samples is not be used for microbiological analysis.

- (r) Where food is sold or stocked for sale or for distribution in sealed containers having identical label declaration, the contents of one or more of such containers as may be required to satisfy the quantity prescribed, shall be treated to be a part of the sample.
- (s) When a sample of any article of food or adulterant is taken, the Food Safety Officer has to, by the immediate succeeding working day, send the sample to the Food Analyst for the area concerned for analysis and report.
- (t) Where the part of the sample sent to the Food Analyst is lost or damaged, the Designated Officer shall, on a requisition made to him, by the Food Analyst or the Food Safety Officer, despatch one of the parts of the sample sent to him, to the Food Analyst for analysis.
- (u) The quantity of sample of food packaging material to be sent to the Food Analyst/ Director of referral lab for analysis is specified below:-

Sl. No.	Name of food packaging material	Approximate quantity/surface area to be supplied
1.	Food packaging material when sample is taken from manufacturer	8 x 1000 x 9 sq.cm. Surface area.”
2.	When sample is taken from small consumer packages.	Complete packaging material used for one container.

(v) The quantity of sample sent for analysis shall be considered as sufficient unless the Food Analyst reports to the contrary.

## F. Sample Size

Quantity of sample to be sent to the Food Analyst: - (1) The quantity of sample of food to be sent to the Food Analyst /Director for analysis shall be as specified in the table below.

Sr. No	Article of Food Approximate	Quantity to be supplied
1.	Milk	500 ml
2.	Sterilized Milk / UHT Milk	500 ml
3.	Malai / Dahi	200 gms
4.	Yoghurt / Sweetened Dahi	500 gms
5.	Chhana / Paneer / Khoya / Shrikhand	250 gms
6.	Cheese/Cheese spread	200 gms
7.	Evaporated Milk/Condensed Milk	200 gms
8.	Ice-Cream/Softy/Kulfi/Ice candy/Ice lolly	300 gms
9.	Milk Powder/Skimmed Milk Powder	250 gms
10.	Infant Food/Weaning Food	500 gms
11.	Malt Food/Malted Milk Food	300 gms
12.	Butter/Butter Oil/Ghee/Margarine/ Cream/Bakery Shortening	200 gms
13.	Vanaspati, Edible Oils/Fats	400 gms
14.	Carbonated Water	3 litre
15.	Baking Powder	100 gms
16.	Arrow root/Sago	250 gms
17.	Corn flakes/Macaroni Products/Corn Flour/Custard Powder	200 gms
18.	18. Spices, Condiments and Mixed Masala (Whole)	500 gms
19.	19. Spices, Condiments and Mixed Masala (Powder)	500 gms
20.	20. Nutmeg/Mace	250 gms
21.	Asafoetida	100 gms
22.	Compounded Asafoetida	150 gms

Sr. No	Article of Food Approximate	Quantity to be supplied
23.	Saffron	20 gms
24.	Gur/jaggery, Icing Sugar, Honey, Synthetic Syrup, Bura	250 gms
25.	Cane Sugar/Refined Sugar/Cube Sugar, Dextrose, Misri/Dried Glucose Syrup.	200 gms
26.	Artificial Sweetener	100 gm
27.	Fruit Juice/Fruit Drink/Fruit Squash	1 ltr
28.	Tomato Sauce/Ketch up/Tomato Paste, Jam/Jelly/ Marmalade/Tomato Puree/Vegetable Sauce	300 gms
29.	Non Fruit Jellies	200 gms
30.	Pickles and Chutneys	250 gms
31.	Oilseeds / Nuts /Dry Fruits	250 gms
32.	Tea/Roasted Coffee/Roasted Chicory	500 gms
33.	Instant Tea/Instant Coffee/Instant Coffee-Chicory Mixture	100 gms
34.	Sugar Confectionery/Chewing Gum/Bubble Gum	200 gms
35.	Chocolates	200 gms
36.	Edible Salt	200 gms
37.	Iodised Salt/Iron Fortified Salt	200 gms
38.	Food Grains and Pulses (Whole and Split)	1 kg
39.	Atta/Maida/Suji/Besan/Other Milled Product / Paushtik Fortified Atta/Maida	500 gms
40.	Biscuits and Rusks	200 gms
41.	Bread/Cakes/Pasties	250 gms
42.	Gelatin	150 gms
43.	Catechu	150 gms
44.	Vinegar/Synthetic Vinegar	300 gms
45.	Food Colour	25 gms
46.	Food colour preparation (Solid/Liquid)	25 gm. Solid/ 100 ml liquid
47.	Natural Mineral Water/Packaged Drinking Water	4000ml in three minimum original sealed packs.
48.	Silver Leafs	2 gm
49.	Prepared Food	500 gms
50.	Proprietary Food, (Non Standardised Foods)	500 gms
51.	Canned Foods	6 sealed cans
52.	Food not specified	500 gms
53.	In case of the unspecified products, the quantity drawn shall be determined in consultation with the Food Analyst.	



## G. Food Analysis

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### A. Analysis of food samples by Food Analyst

- (a) On receipt of the package containing a sample of food for analysis, the Food Analyst or an officer authorized by him shall compare the seals on the container and the outer cover with specimen impression of seal received separately and shall note the condition of the seal thereon.
- (b) Food laboratories including mobile food laboratories wherever required, may be established or notified by the Central/State Government for the purpose of testing food samples received from the Food Safety Officer/purchaser.
- (c) the sample container received by the Food Analyst is found to be in broken condition or unfit for analysis, he shall, within a period of seven days from the date of receipt of second such sample, in form the Designated Officer about the same and request him to send these cond part of the sample for analysis.
- (d) On receipt of requisition from the Food Analyst pursuant to Rule2.4.2(3) the Designated Officer, shall by the succeeding working day, dispatch to the Food Analyst for analysis one part of the samples sent to him by the Food Safety Officer.
- (e) On receipt of the sample, the Food Analyst shall analyse or cause to be analysed the sample and send the analysis report mentioning the method of analysis. The analysis report shall be as per Form VIIA and four copies of the same shall be sent to the Designated Officer under whose jurisdiction the Food Safety Officer functions or the purchaser of article of food. The analysis report shall be signed by the Food Analyst and such report shall be sent within fourteen days of the receipt of the sample by the Food Analyst.
- (f) The Designated Officer shall keep two copies of analysis report for further action, one copy shall be sent to Food Safety Officer for record and one copy to Food business Operator from whom the sample was taken.
- (g) Provided that in case the sample cannot be analysed within fourteen days of its receipt, the Food Analysts shall inform the Designated Officer and the Commissioner of Food Safety giving reasons and specifying the time to be taken for analysis.
- (h) The manuals of the method of analysis, as amended/adopted by the Authority from time to time including AOAC/ISO/Pearson's/Jacob/IUPAC/Food Chemicals CODEX/ BIS/ Woodmen/Winton-Winton/Joslyn, shall be used for analyzing the samples of food articles. However, in case the method for analyzing any parameter is not available in these manuals, validated method of analysis prescribed by internationally recognized/analytical/regulatory agencies, shall be adopted

### H. Action by Designated Officer on the report of Food Analyst.

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If, after considering the report, the Designated Officer is of the opinion for reason(s) to be recorded in writing, that the report delivered by the Food Analyst under Rule2.4.2(5) is erroneous, he shall forward one of the parts of the sample kept by him to referral laboratory, for analysis and if the analysis report of such referral laboratory is to the effect that the article of food is unsafe or sub-standard or mis-branded or containing extraneous matter, the provisions of Rule3.1 shall so far as may be apply.

## I. Purchasers may have the food analysed

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- (a) A Purchaser of food article may, if he so desires, have the article analysed by the Food Analyst according to the procedure notified by the Food Authority.
- (b) If the Purchaser desires to have the food article purchased by him to be analysed by the Food Analyst, he shall give a notice in writing, then and there, in Form VB of his intention to have it so analysed to the person from whom he has purchased the food article.
- (c) The provisions of Rule 2.4.1 shall mutatis mutandis apply except 2.4.1(9)(i,iv), 10(ii,iii), 11, and 16 and with the modification that the samples shall be divided into two parts or two already sealed packages will be taken each of which will be marked and sealed or fastened up in such a manner as its nature permits and the signature or thumb impression of the person from whom the sample has been taken or a witness will be affixed on the label mentioned in 2.4.1(8). The purchaser will forward one part of the sample to the Food Analyst and the other to the Designated Officer which can be used in the event of appeal by the Food Business Operator against the finding of the report of the Food Analyst.
- (d) The Purchaser shall pay the prescribed fee to the Food Analyst for carrying out the analysis.
- (e) The Food Analyst shall send to the Purchaser his report on analysis of the article of food and if the finding of the report is to the effect that the article of food is adulterated/ misbranded/ contaminated or does not conform to the standards prescribed under the Act or the Regulations, the Food Analyst shall also send his report in triplicate, to the Designated Officer of the area in which the article of food was purchased, besides sending a copy of the Report to the Purchaser.
- (f) The report of the Food Analyst shall be sent within 14 days of the receipt of the article of food for analysis and such report shall be in Form VIIA.

## J. Food business operator's right to have the food analysed

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- (a) In case the Food business operator from whom the sample has been taken or the person whose name and address and other particulars have been disclosed under Rule 2.5 of these rules, desires to have the fourth part of the sample analysed, he shall request the Food Safety Officer in writing to send the sample to any NABL accredited laboratory.
- (b) The Food Safety Officer shall send the sample to a NABL accredited/FSSAI notified laboratory, under intimation to the Designated Officer forthwith, in the manner prescribed under Rule 2.4.1. Provided that the cost of testing by the accredited lab will be borne by the Food Business Operator or the person identified under Rule 2.5. The payment shall be made by the Food Business Operator through Bank draft or online transfer or treasury chalan or any other suitable means as specified by the Designated Officer. Provided further that the Accredited lab where the Food Safety Officer will send the sample, should be within the state or the neighbouring state wherever available
- (c) The Food Analyst in-charge of the accredited laboratory shall analyse the sample within fourteen days from the date of the receipt of the sample Provided that in case the sample cannot be analysed within fourteen days from the date of its receipt, the Food Analyst/in-charge of the accredited laboratory, shall inform the Designated Officer and the Commissioner of Food Safety giving reasons and specify the time to be taken for analysis.
- (d) The Food Analyst shall send four copies of the analysis report to the Designated Officer, in the proforma given in Form VII A, indicating the method of analysis.

## K. Food Laboratories

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### Introduction

One of the key mandates of FSSAI as per Chapter VIII, Section 43 of the Food Safety and Standards Act, 2006 is to foster an ecosystem for testing of food at labs for compliance with the Food Safety standards.

The Food Authority notifies food laboratories and research institutions accredited by National Accredited Board for Testing and Calibration Laboratories or any other accreditation agency for the purposes of carrying out analysis of samples by the Food Analysts under this Act. As per the FSS Act, 2006, the Food Authority shall, establish or recognise by notification, one or more referral food laboratory or laboratories to carry out the functions entrusted to the referral food laboratory by this Act or any rules and regulations made thereunder.

FSSAI has framed the Food Safety and Standards (Recognition and Notification of Laboratories) Regulations, 2017 which lay down:

1. The functions of food laboratory and referral food laboratory and the local area or areas within which such functions may be carried out,
2. The procedure for submission to the said laboratory of samples of articles of food for analysis or tests, the forms of the laboratory's reports thereon and the fees payable in respect of such reports; and
3. Such other matters as may be necessary or expedient to enable the said laboratory to carry out its functions effectively.

As against 64 NABL Accredited food testing laboratories and research institutions notified by FSSAI in 2014, presently there are 142 NABL accredited food testing laboratories and research institutions. Similarly FSSAI notified Referral Laboratories have increased from 12 in 2014 to 16 at present. This is a perpetual activity and the number of notifies laboratories would keep on increasing in the coming years.

## L. Laboratories and their Functions

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1. Functions of the Laboratory Notified Under Section 43 (1) - The Notified Laboratory shall carry out the following functions, namely:
  - i) Enforcement of food laws by virtue of testing food against the prescribed quality and testing parameters (as per relevant FSSR, 2011 as amended from time to time);
  - ii) In surveillance activity to ensure that the food products sold are standardized and also complying with the existing standards;
  - iii) Assist in testing of imported food thereby ensuring the transparent mechanism of trade and also testing of regulatory samples compliance;
2. Functions of Referral Laboratory [Notified Under Section 43 (2)] - Referral Laboratory shall be a Government Laboratory. In addition to the functions entrusted to the Referral Laboratory under the Act, it shall carry out the following functions, namely:
  - i) Analysis of samples of food sent by any officer or authority authorized by the Food Authority for the purpose and submission of the certificate of analysis to the authorities concerned;
  - ii) Investigation for the purpose of fixation of standard of any article of food;

- iii) Investigation in collaboration with the laboratories of various States and such other laboratories and institutions which the Food Authority may approve on its behalf, for the purpose of standardizing methods of analysis.
  - iv) Ensuring that the laboratory follows the scientific protocols laid down for handling/testing the articles of food.
  - v) Maintaining high standards of accuracy, reliability and credibility in the operation of the laboratory and achieving and maintaining the required levels of accreditation and reliability.
  - vi) Laying down mechanism for ensuring that personnel of the laboratory adhere to high professional standards and discipline.
  - vii) Capacity building by way of organizing professional training, workshops and seminars for the Food analyst, laboratory personnel in the states specified by the Food authority.
  - viii) Playing the role of appellate laboratory in case of any dispute over the results of analysis between two parties (Laboratories/ Food Business Operators) within the ambit of FSSAI,
  - ix) Such other functions, as the Food Authority may lay down for Referral Laboratories, from time to time.
3. Functions of Reference Laboratory [Any of the Laboratories Notified Under Section 43 (1) and/or (2)] - Referral Laboratory shall be a Government Laboratory. The functions of any laboratory designated as Reference Laboratory shall be the following:
- i) The reference laboratory shall perform the function of method development, method validation, proficiency testing and training.
  - ii) To set up country wide standards for routine testing procedures and reliable testing methods.
  - iii) The reference laboratory shall evaluate the performance of other notified laboratories.
  - iv) It shall coordinate exchange of information amongst notified laboratories.
  - v) It shall also collaborate for data generation among their network and collate the data related to their specific domain.
  - vi) Such other functions, as the Authority may lay down for Reference Laboratories.

## M. Indian Food Laboratory Network (INFoLNET)

### Introduction

Testing of food products at different levels of supply chain is a critical activity in the entire food safety compliance ecosystem to ensure that only products, which comply with the Act and regulations are sold in the market. Food Safety and Standards Act, 2006 gives authority to Food Safety Officer to draw samples which are intended for sale or human consumption. Act has also mandated FSSAI to notify laboratories from time to time for testing of various food products in the country.

Currently testing is being done by State Labs and Private Labs across the country, however, the test reports are not available to FSSAI in real time. The reports are only made available in physical form upon request which makes it impossible to keep this data for future reference.

INFoLNET is a web enabled system connecting all food testing laboratories in the country to build a repository of Lab test reports. It gives access to FSSAI as well as Non-FSSAI approved Laboratories to publish their test reports online for all types of samples namely Compliance, Surveillance, Enforcement, Import and Citizen, in real time so that this information

is readily available to FSSAI for their verification and analysis. It has online as well as offline version and caters to mobile labs also.

In addition to creation of database of test results, INFoLNET shall also help to maintain technological and human capabilities of the labs which is required to ensure sufficient infrastructure with rising population and demand for food products.

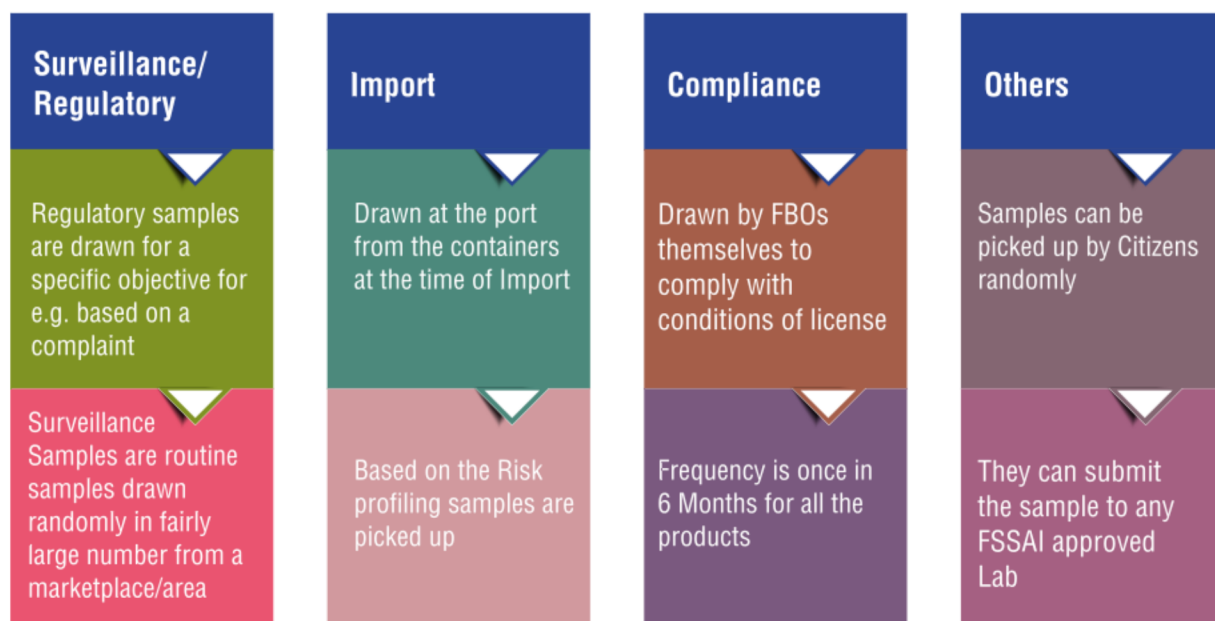
### INFoLNET building blocks

- Database of all food testing laboratories alongwith their capabilities across the country
- Database of product standards for which testing is to be done
- Process to test all types of samples mentioned above

### INFoLNET Users

- Laboratory
- Food Safety Officer
- Authorised Officer
- Designated Officer
- Food Business Operator
- FSSAI
- Food Safety Commissioner Office
- Research Institutions and Other Govt Agencies

### Types of Sampling



## INFoLNET Modules

- **Sample Registration**

Initial step is to register the sample in the system. Following users register the sample in the system:

- Surveillance Sample / Enforcement Sample – FSO
- Compliance Sample – FBO
- Import Sample – Authorised Officer
- Citizen Sample - Laboratory

- **Sample Codification**

Every sample has to be uniquely identified before it is sent to Lab. INFoLNET has a provision to generate sample slip with unique number. FBO, FSO and AO has to generate the sample slip before registration of sample and key in the unique number in INFoLNET at the time of registration.

- **Lab Assignment/Request for testing**

In case of surveillance and enforcement samples, INFoLNET based on product and location, shall shortlist nearby laboratories which can test that product. FSO can then decide the lab for testing. In case of Citizen and FBO, they can choose the lab depending upon the product, location and their convenience.

- **Lab Management System**

- Sample Receipt

Once the sample reaches Lab, they need to acknowledge it in the system. If the sample is already bar coded, they can proceed for screening else they need to generate a bar code for the same. For citizen sample, Lab needs to capture the sample details. For other samples, data is already captured in the system at the time of sample registration.

- Screening

At this stage, preliminary screening of sample is done to check the virginity. Sample can be rejected if found tampered.

- Test Result Entry

There are several modes of capturing the test data:

- ◆ Manual entry
- ◆ Excel upload
- ◆ Through LIMS

- **Approval and Generation of test report**

Once the test results are uploaded in the system, it is screened by lab in-charge for final approval and generation of test report. Modification in test data is allowed only before generation of test report.

- **Mobile Lab**

- Sample Registration

- Qualitative Testing
- Test Report Upload

- **Surveillance Planning**

Objective of this module is to enable FSSAI and FSC to create a surveillance plan at state and district level respectively.

- **Capturing Alerts**

Provision for Risk Cell to capture disease alerts/recalls in the system so that surveillance planning can be done at regional level.

## **INFoLNET Benefits**

1. Availability of test data on real time basis for
  - a. Risk Analysis
  - b. Risk Profiling of products, locations, FBOs
2. Uniform parametric testing across all facilities for all products
3. Knowhow of Lab capabilities and identification of need for capacity building, re-skilling etc.
4. Better surveillance planning
5. Improvement in product standards based on historic trends of test data
6. Transparency in sampling procedure
7. Need analysis of Lab requirement at a particular geographic location for particular food product, testing facility etc.