

File No. 15023/02/2017-QA (pt-2)
Food Safety and Standards Authority of India
(A statutory Authority established under the Food Safety and Standards Act, 2006)
Regulatory Compliance Division
FDA Bhawan, Kotla Road, New Delhi-110002


Dated, the 10th January, 2020

Subject: Scheme of Testing and Inspection to be adopted by dairy processing plants for the purpose of self-monitoring & strengthening of internal controls.

This has reference to the order vide File No. 15023/02/2017-QA (pt-2) dated 13th October, 2019 regarding the subject mentioned above wherein it was decided that dairy processing plants should follow a standardized Scheme of Testing and Inspection for monitoring of internal controls to ensure safe and good quality supply of milk and milk products to consumers.

2. Representations were received from various stakeholders regarding the implementation of the scheme and after consideration, scheme has been amended accordingly.
3. In view of the above, a revised Scheme of Testing and Inspection is annexed which has to be followed by dairy processing plants for monitoring of internal controls to ensure safe and good quality supply of milk and milk products to consumers.
4. All dairy processing plants shall maintain appropriate records in this context which would be verified during surveillance visits/inspections.
5. This issues with the approval of the Competent Authority in exercise of the power vested with Food Authority under section 16(5) of the FSS Act, 2006.

Encls: As above



Dr. Shobhit Jain

Executive Director (Compliance strategy)

To,

- (i) Commissioner of food safety of all states/UTs
- (ii) All Food Business Operators
- (iii) All Central Licensing Authority
- (iv) CITO, FSSAI: For uploading this direction on website

SCHEME OF TESTING AND INSPECTION FOR MILK (STI)

To ensure the safety and quality of milk supplied to consumers, FSSAI has developed a scheme for sampling and testing to be implemented by dairy processing establishments to strengthen the internal controls through self-monitoring. The scheme has to be implemented at all the dairy processing establishments as per the frequency mentioned in the enclosed document. The dairy establishments shall test raw milk, in process and finished products for adulterants, hygiene indicators, microbial contaminants and safety parameters like pesticides, antibiotics, aflatoxins etc. at scheduled frequency. The establishments shall ensure that the samplers have adequate knowledge of sampling of raw and processed milk from different locations as per the scheme.

The scheme stipulates the minimum sampling points, test methods and frequency of sampling. The establishment may consider to increase the sampling points and sampling frequency as per their requirement with respect to capacity, production process and risk associated with the product and process.

The dairy processing establishments shall have a well-equipped in-house laboratory for testing microbiological and other chemical parameters. The testing shall be done by qualified and trained laboratory personnel. In case of unavailability of in-house testing facilities for test parameters that require advanced analytical equipments, the tests may be carried out at FSSAI notified lab. The details of FSSAI notified labs are available at www.fssai.gov.in

The establishments shall maintain all the test records at least for a period of one year in addition to the documents and records listed in Part 3 of Schedule 4 of Food Safety and Standards (Licensing and Registration) Regulations, 2011. The results of all such tests shall be made available to the officials of Food Authority or Food Safety Commissioner for verification as and when required.

In case any non-compliance is reported and deviation can be corrected without affecting the safety and quality of milk, then it should be re-processed and again

tested to ensure that re- processed milk conforms to all the requirements. However, if there is a non compliance on parameters which cannot be corrected even by re-processing like presence of residues, adulterants etc., the entire batch shall be rejected. In case its already under process, then production shall be stopped immediately. The production shall be resumed only after carrying out root cause analysis for the non compliance, corrective and preventive action is taken and its effectiveness verified during subsequent testing. The records of all such investigation shall be maintained.

A separate record shall be maintained giving information on quality and batch no. as applicable, relating to all such rejections/defective/sub-standard material of the production not conforming to the requirements and the method of its disposal. Such material shall in no case be stored together with that conforming to the specification.

The scheme document, format of reporting and minimum lab facility/equipments required to establish in-house testing facility at raw milk reception dock is annexed.

SCHEME OF TESTING AND INSPECTION FOR MILK (STI)

STI is a document which specifies the control over production process from raw milk receipt till finished goods dispatch, which the manufacturer is required to record, maintain and ensure compliance in terms of standards and safety parameters. This document is to be maintained by the FBOs for liquid milk business.

SCHEME OF TESTING AND INSPECTION FOR MILK (STI)								
S.N	INSPECTION CHARACTERISTIC	INSPECTION/METHOD *	SPECIFICATION / LIMITS	INSPECTION POINT	TESTING FREQUENCY			
1	Seal of Integrity	Visual Inspection	Ok	Raw milk reception / Release (Raw milk can/Milk tanker)	Standardization /Pasteurization (Silo / Milk Storage tanks)	Finished Goods (Processed and packed milk and dispatch milk tanker)	Raw Milk	Processed Milk
2	Appearance	Visual Inspection	White to cream colour, Odour typical of fresh milk.				Every Tanker	Every Batch or Silo
3	Taste and Flavour (Organoleptic evaluation)	Sensory Evaluation	Satisfactory				Every Tanker/Container	Every Batch or Silo
4	Foreign matter	Visual inspection/Filtration	Absent				Every Tanker/Container	
5	Temperature	Thermometer	at max 6 deg				Every Tanker/Container	Every Batch or Silo
6	Fat	Chemical extraction, Gerber Method, electronic	Specified as per FSSR				Every Tanker/Container	Every Batch or Silo
7	SNF	Density (eg lactometer),	Specified as per FSSR				Every Tanker/Container	Every Batch or Silo

8	SMP (for species identified milk and mixed milk)	Gravimetric, electronic Chemical	Negative				✓	ner	Silo Every batch (specifies identified products)
9	Acidity	Titration	Min. 0.10% Max 0.15 % (as lactic acid) at 8.5% SNF		✓	✓	✓		Every Batch or Silo
Adulterants									
10	Cellulose	Chemical, electronic, approved strip/ rapid detection tests	Negative	✓				Quarterly per milk route	
11	Starch	Chemical, electronic, approved strip/ rapid detection tests	Negative	✓				Every Tanker	
12	Formalin, H ₂ O ₂ , Boric acid	Chemical, electronic, approved strip/ rapid detection tests	Negative	✓				Every Tanker	
13	Detergents / Caustic Soda	Chemical, electronic, approved strip/ rapid detection tests	Negative	✓				Every Tanker	
14	Vegetable oil / Fat	Chemical, electronic, approved strip/ rapid detection tests	Negative	✓				Every Tanker	
15	Maltodextrin	Chemical, electronic, approved strip/ rapid detection tests	Negative	✓				Every Tanker	
16	Dextrose (=glucose)	Chemical, electronic, approved strip/ rapid detection tests	Negative	✓				Every Tanker	
17	Urea	Chemical, electronic, approved strip/ rapid detection tests	700 mg / Kg	✓				Every Tanker	

18	Sucrose(Cane sugar)	Chemical, electronic, approved strip/ rapid detection tests	Negative	✓				Every Tanker	
19	Salts (NaCl, KCl)	Chemical, electronic, approved strip/ rapid detection tests	Negative	✓				Every Tanker	
20	Neutralizer (Carbonate, bicarbonate, per carbonate)	Chemical, electronic, approved strip/ rapid detection tests	Negative	✓		✓		Every Tanker	Every Batch or Silo
21	Nitrates	Chemical, electronic, approved strip/ rapid detection tests	Negative	✓				Every Tanker	
Chemical Contaminants									
22	Pesticides residue (with isomers)	Chemical, electronic, approved strip/ rapid detection tests	Specified as per FSSR	✓		✓		Quarterly per milk route	Quarterly
23	Antibiotic / Veterinary Drugs residues	Chemical, electronic, approved strip/ rapid detection tests	Specified as per FSSR	✓		✓		Quarterly per milk route	Quarterly
24	Aflatoxin M1, max.	Chemical, electronic, approved strip/ rapid detection tests	0.5 µg / Kg	✓		✓		Quarterly per milk route	Quarterly
25	Melamine	Chemical, electronic, approved strip/ rapid detection tests	Specified as per FSSR	✓		✓			Every six months
Microbiological									

Contaminants												
26	MBRT	Dye reduction	Min 30 Minutes for raw chilled milk & Min 5 Hrs 30minutes for Pasteurised milk	✓				✓			Every Tanker	Every Batch or Silo
27	Phosphatase	Chemical, Dye reduction	NA		✓			✓				Every Batch or Silo
28	SPC/ml**	Pour plate method, electronic		✓							Every milk route	
29	Coliform/ml**#	Pour plate method, electronic		✓				✓			Every milk route	Every Batch or Silo
30	WATER SUPPLY FOR DAIRY PROCESSING UNIT (As per IS 10500) to be used											

Note: *FSSAI Manual of Methods of Analysis for Milk and Milk Products and any other appropriate method which includes, BIS test methods, AOAC test methods, FSSAI approved Rapid Kit or test methods as applicable

**It is only a hygiene indicator, # Desirable but the FBO could take decision on what best to be done for compliance and safety related to marked parameter.

Information required for testing of milk and milk products

S. No.	Test Parameters	Chemical / Equipment
1.	Seal	Visual
2.	Appearance	Visual
3.	Taste and Flavor	Sensory
4.	Foreign matter	Visual
5.	Temperature	Thermometer
6.	Fat	Sulphuric acid, Iso Amyl Alcohol, Gerber Centrifuge / Rapid test apparatus- Milkoscreen
7.	SNF	Lactometer, Thermometer / Rapid test apparatus- Milkoscreen
8.	SMP	Acetic acid, Phosphomolybdic acid
9.	Acidity	Sodium Hydroxide, Phenolphthalein
10.	Cellulose	Iodine, Zinc Chloride (Qualitative)
11.	Starch	Iodine, Potassium iodide (Qualitative) Ethanol, sodium hydroxide, Sodium carbonate (Quantitative)
12.	Formalin	Sulphuric Acid
13.	H ₂ O ₂	Vanadium pentoxide, Sulphuric acid (1 st method) or Para-phenylenediamine (2 nd method)
14.	Boric acid	Turmeric paper, Hydrochloric acid, Ammonium hydroxide
15.	Detergent, Caustic soda	Tetrachloroethane, citric acid , Sodium Hydroxide
16.	Vegetable oil/Fat	Sulphuric acid, Iso Amyl Alcohol, Gerber Centrifuge
17.	Maltodextrin	Potassium iodide, iodine, lactic acid / Rapid test apparatus- Milkoscreen
18.	Dextrose or Glucose	Modified Barford's reagent, Phosphomolybdic acid
19.	Urea	para-dimethylaminobenzaldehyde (DMAB), ethyl alcohol, Hydrochloric acid/ Rapid test apparatus- Milkoscreen
20.	Sucrose	Resorcinol / Rapid test apparatus- Milkoscreen
21.	Salts	Silver nitrate, Potassium chromate

Information required for testing of milk and milk products

22.	Neutralizers	Rosalic acid , Ethyl alcohol
23.	Nitrate	Diphenylamine, Sulphuric acid
24.	Added Water	Lactometer / Rapid test apparatus- Milkoscreen
25.	Pesticide Residue	Organophosphate, Organochloride and Carbamate pesticide Rapid test kit / Chromatographic techniques involving high end equipments
26.	Antibiotic, Veterinary Drug	Lateral Flow Assay Rapid Test equipment, Consumables- 25 Antibiotics / Chromatographic techniques involving high end equipments
27.	Aflatoxin M1	Lateral Flow Assay Rapid Test equipment, Consumables / Chromatographic techniques involving high end equipments

Note: FSSAI Manual of Methods of Analysis for Milk and Milk Products and any other appropriate method which includes BIS test methods, AOAC test methods, FSSAI approved Rapid kit or test method as applicable

Format in which records of STI are to be maintained by dairy establishments

S. No.	Date	Test Parameter as per STI	Test method	Sampling point	Batch no./ silo no./ tanker no.	Results	Action taken in case of non compliance