Product Sampling, Inspection, and Analysis

Definition

A check in the system to determine if the raw material, work in progress, or finished product meets the specification or ideal result.

Implementation & Audit Guidance

Review Glossary Terms

1. Proficiency Testing

What does it mean?

During the normal course of food production and manufacturing, product must be sampled and analyzed either before, during or after production, to ensure that it meets specifications and to verify food safety aspects.

Why is it in the Code & why is it important?

The site shall document a procedure outlining the methods established to test finished product, work-in-progress and/or raw materials to ensure they meet specification in relation to food safety. Inspections, test, or analysis of finished product must be finalized before delivery to a customer. Finished product testing may be defined by the supplier and their customer.

The site must identify those with responsibility for sampling, inspecting, and testing finished product, work-in-progress and/or raw materials and identify the methods used to collect samples and complete these tests, inspection, and analyses. These individuals are to be trained in the appropriate sampling or testing techniques relevant to their responsibility.

The types of testing that are conducted on finished product should be determined by the finished product specification. Examples are varied, depending on the nature of the test for food safety or quality and can include sensory analysis (e.g., taste, color, flavor, odor), physical (e.g., count, weight, size, texture), chemical (e.g., fat, salt, moisture, Aw, brix, pH), or microbiological (e.g., aerobic plate count, yeast and mold, coliforms, lactics). It should be noted that if pathogens (e.g., *Salmonella* spp., *E. coli* (STEC), *Listeria monocytogenes*) are found on finished product, that product should not be released into the marketplace until test results are obtained and negative results are verified. If microbiological retesting is required, the sampling plan and retesting must be more robust than the original sampling plan to ensure the validity of results. It is not valid to simply retest a sample when results are obtained that are not desired by the site.

If external laboratory analysis is used, the supplier must demonstrate that such analysis is completed by a recognized laboratory that is accredited to ISO 17025 or an equivalent national standard, and one that uses recognized industry standard methods. When checking the

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accreditation status of the laboratory, be sure to check that the testing method is under the laboratory's scope of accreditation. These methods may be described in the specifications.

If in-house sampling and testing is conducted for raw materials, finished product and work in progress of critical food safety tests, then the interpretation of the following code requirements would be identified as meeting the applicable requirements to ISO 17025.

SQF Code Requirement	How the code applies to ISO 17025
Food Safety Culture	The site should be able to demonstrate the available resources and competencies to support the services necessary to manage and perform its sampling and testing activities.
Reporting Structure	Selection and job descriptions for personnel conducting sampling and testing methods should be included in the site's organizational structure. The reporting structure should ensure the impartiality of the laboratory activities and shall not allow the commercial, financial, or other pressures to compromise impartiality.
Records	The site shall demonstrate that the records of the results of the food safety tests have been verified, maintained.
Contract Service Providers	External laboratories, calibration service providers are to be included in the site's contract service provider list.
Product Sampling, Inspection and Analysis	Identification and documentation of the appropriate tests respective to food safety when inspecting, and/or analyzing raw materials, work-in-progress, and finished product. Testing and sampling methods are to be representative of the batch, suitable to the environmental conditions and activities so that the results are not adversely affected and completed at regulator intervals according to specifications and legal requirements.
Product analysis	Sampling and testing methods should be conducted following nationally recognized method or company requirement. Proficiency testing should be conducted to calibrate the performance of the laboratory personnel and/ or the test methods and checked against an accredited external laboratory. External laboratories shall operate in accordance to 17025 or equivalent.
On-site laboratories	Location of the internal or laboratory site shall not pose a risk to food safety. Laboratories should include signage restricting access to authorized personnel.
Managing laboratory waste	Proper containment and disposal of laboratory waste and good laboratory practices are to be followed.
Retention samples	The site should store retention samples according to the typical storage conditions of the product.
Records	Record retention for all inspections and analyses and reporting of results are to be maintained.

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Non-conforming Product	When results do not meet specification or achieve the ideal result, action should be taken when test results do not meet identified specification or regulatory requirements. The identified product should be handled so that the non-conforming product does not enter commerce.
Positive product release	If the event that the site uses a successful result prior to product release, the site is to have in place methods to ensure that the product is not released until al acceptable results have been received.
Training of personnel	Training of personnel involved in sampling and test methods for food safety tests is to be conducted and training records maintained.
Calibration program	Calibration of laboratory equipment should be included in the site's calibration program. This shall include maintaining records of sampling and testing equipment.

See RIO Chart on following page.

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RIO Road to Audits (Records, Interviews, and Observations)

Records	Interviews	Observations
The following are examples of records and/or documents to assist in the implementation and review of this topic: ▪ Methods for sampling, inspecting, and/or analyzing raw materials, finished product and work in progress. ▪ Specifications for raw materials, finished product and work in progress. ▪ Training records of relevant personnel. ▪ Accreditation records or other means to demonstrate adherence to ISO 17025 if outside laboratories are used for food safety tests. ▪ Test results and notable action.	The following are examples of people to interview to assist in the implementation and review of this topic: ▪ Laboratory manager ▪ QA technician ▪ Human Resources (or responsible department for training) The following are examples of questions to ask to assist in the implementation and review of this topic: ▪ What are the tests that are conducted at the site? What tests are critical to food safety? ▪ What is the reference document used against the test methods? ▪ How are the results of the tests analyzed? Are the trends of the tests analyzed? ▪ Have there been micro testing conducted? What were the results? ▪ Has there been unfavorable results? What was the action?	The following are examples of observations to assist in the implementation and review of this topic: ▪ Sampling and testing of an in-house test. ▪ On-hold area for raw materials, finished product, and work in progress.

Additional References

- ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories.
- Official Methods of Analysis of AOAC International – 18th Edition, Revision 3
- June 2019 Learning Lunch Webinar: Proficiency Testing for your SQF Audit (Safe Quality Food Institute YouTube Channel).
- Guidance document for Proficiency Testing

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