Product Analysis

FSKN I 6

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GFSI Intermediate Requirements

- The company shall implement a system to ensure that product/ ingredient analyses critical to food safety and legal requirements are undertaken and ensure the methods used provide valid results (e.g. by procedures set forth in ISO 17025 and/or industry recognized methods).

The Importance of Product Analysis

- Product analysis is one of the verification tools to assess the effectiveness of food safety procedures
- Product analysis maybe carried out ‘in house’ or by a third party ‘service provider’ and should be controlled and managed using best practice principles
- There maybe legal safety requirements, which require verification
- There maybe customer specific requirements where the finished product will require testing before despatch
- There is an increasing number of labelling requirements that require verification by product analysis e.g. nutritional values

Types of Product Analysis
Biological Hazards

- Bacteria
- Viruses
- Parasites

Types of Product Analysis
Chemical Hazards

- Toxins from microbiological origin
- Bacteria- Clos. botulium, Histamine, Mycotoxin, Patulin,
- Pesticides/ Insecticides
- Hormones
- Veterinary Residues
- Cleaning Chemical
- Allergens
- Heavy metals
- Food additives
- Transfer from Packaging Materials
- Dioxins

Types of Product Analysis
Physical Hazards

- Extraneous plant material
- Animal parts – bone, teeth
- Harvest derived foreign objects
  - Stones, wood, glass, soil, pests
- Factory derived foreign objects
  - Glass, wood, plastics, packaging, pests , building fabrication, equipment parts

Types of Product Analysis
Labelling and Compositional Claims

- Dietary Claims e.g. low fat, high energy, 'free from X'
- Organic
- Nutritional Information
- Regulatory composition

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The Principles of Good Product Analysis

Sampling plan & sampling documentation

Sample referencing and protection of integrity

Monitoring the quality of test results

Test results and interpretation

Ensure record integrity and security

The Requirement for the Product Analysis Program

- There may be specific requirements to undertake product analysis- legal or customer
- If there is no specific requirement then the requirement to carry out product analysis should be based on risk; product risk and supplier risk
- Define product analysis program
- Develop for raw materials, in process product and finished product
- Consider the sampling frequency required ; consider different sampling levels for new raw materials or sources of raw material
- Where sampling takes place develop procedures and methodologies; ensure sample integrity i.e. cross contamination, temperature/time of storage
- Testing methodologies should be considered , documented and implemented

Product Analysis Program

Raw materials

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Product Product Ref	Supplier	Sampling Frequency	Sampling Procedure	Test Methodology
Fresh Chicken Breast	A Smith & Co	Every delivery	Procedure- CB1 Version 1	Total Viable Count Method QA M/1
Fresh Chicken Breast	A Smith & Co	Every week	Procedure- CB1 Version 1	Coliform Method QA M/3
Fresh Chicken Breast	A Smith & Co	Every month	Procedure- CB1 Version 1	Salmonella Method QA M/15
Fresh Chicken Breast	A Jones	Every delivery	Procedure- CB1 Version 1	Total Viable Count Method QA M/1
Fresh Chicken Breast	A Jones	Every delivery	Procedure- CB1 Version 1	Coliform Method QA M/3
Fresh Chicken Breast	A Smith & Co	Every week	Procedure- CB1 Version 1	Salmonella Method QA M/15

Testing – Quality Assurance

- Any product analysis should be undertaken by trained, competent staff
- A system should exist that provides confidence in the reliability of results which should include:

➢ Use of recognised test methodology

➢ Use of qualified or trained analysts

➢ Use of a system to verify the accuracy of results; ring or proficiency testing

(Testing uses certainty check with certified reference materials or verify with an analytical method and cross reference with other laboratories)

- The testing laboratory should be suitably furnished with equipment commensurate with the types of analysis undertaken
- Where appropriate, testing equipment should be calibrated and maintained

The Principles of ISO 17025

The General Requirements for the Competence of Testing and Calibration Laboratories

There are two main clauses in ISO/IEC 17025

1. Management Requirements - Management requirements are related to the operation and effectiveness of the quality management system within the laboratory
2. Technical Requirements- Technical requirements address the competence of staff; testing methodology; equipment and quality; and reporting of test and calibration results.

Technical Requirements of ISO 17025

- Sampling of product should be performed according to a sampling plan, and all sample details should be documented
- Samples should be uniquely identified and the sample integrity should be protected during transport and storage
- The proficiency of test results should be monitored
- Test reports should include test results as well as an estimation of the overall measurement uncertainty. The report should also include either detailed information about the sample and test conditions, or a link to a reference document
- Records should be maintained to ensure data integrity and security

Technical Requirements of ISO 17025

- Documented procedures
- Validation of analytical methods and procedures
- Assurance of equipment calibration and maintenance
- Identification and traceability of samples
- Competence of staff
- Control of non conforming testing

Management Requirements of ISO 17025

Similar to ISO 9000

- Organisation structure and management
- Supplier and subcontractor management
- Corrective and preventative actions
- Internal audits
- Documentation control
- Complaint handling

Certificates of Analysis

- Suppliers may submit certificates of analysis as proof of compliance
- The integrity of these certificates should be challenged and checked for compliance within a sampling plan

Shelf Life Testing

- Product shelf life validation should be undertaken against a defined protocol
- Consideration should be given to transport and storage conditions that are expected within an ‘anticipated ‘ shelf life; this is particularly important for perishable high risk foods where pathogenic micro organisms may survive.
- Check all product claims that can be verified by analytical techniques
- Check nutritional values during product development and at the end of the shelf life, some nutrients may vary particularly vitamins

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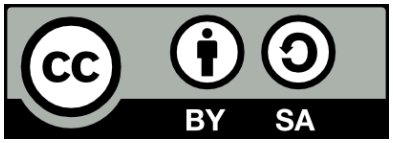

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