



Food Manufacture

Product Quality Analysis

Lesson 4

This course is ideal for people working or have the potential to work in the quality or technical departments. The course describes the ways that product quality analysis is performed.





Physical testing of the product and ingredients are carried out throughout the whole factory by quality control and quality assurance auditors. However factory operatives may have to carry out physical tests as part of their job roles. Some factories use approved certified testing companies to perform this role.





Each product and ingredient has a specification which outlines characteristics that must be met to ensure the quality, legality and safety of the product is not compromised.

A specification is used as a reference to determine if the product or ingredient is the correct quality.





**There are lot's
of different
physical tests
carried out
regularly to
monitor quality.**



The count and size of the product or ingredient is measured. The specification will state the size or number of a product/ingredient which must be used to measure against e.g. the length of chopped onion or size of a sausage.





Determination of any physical defects usually involves a visual check e.g. bruising to fruit and vegetables.





The appearance, tightness and condition of the inner surface must all be checked to monitor product quality. This is most commonly performed using a visual check. A specification is used to determine the correct appearance of the product/ingredient e.g. is it a burnt colour.





If there are issues with the appearance of the product further tests may be need to be performed e.g. testing oil quality on fryers.





Checking the product/ingredient for any foreign bodies can be done visually and using equipment. Some examples of equipment used for foreign body detection are metal detectors and magnets. This is not just a quality check it also forms part of the factory HACCP system.





Granulation/particle size testing can be tested using a sieving technique but more technical methods such as laser diffraction and dynamic light scattering can also be performed in laboratory conditions.





The texture of the product/ingredient can be monitored using a texture analyser. This is a machine which measures the foods response to being subjected to a force. An organoleptic test is also used to determine texture.



The viscosity of the product and ingredients can be measured and checked against a specification. Viscosity is the flow behaviour of a product or ingredient. Viscosity can be measured using a viscometer a commonly used one is called a Bostwick consistometer.





The pH of the product or ingredient is tested using a pH meter. pH of the product can be used as a food safety measure so this test can form part of a factory HACCP system.



The weighing of the product or ingredient is an important physical test that is performed throughout the whole of the factory process. The weight of a product can have an effect on the product safety as well as quality e.g. an overweight product will take longer to cook and achieve a safe core temperature.





Scales are used to monitor the weight of products and ingredients. There are several different types of scales used which are all fit for their intended purpose e.g. floor scales, inline scales and check weighers.





The specification will determine what is an acceptable and unacceptable weight for products, packs and ingredients.





The temperature of the product testing is performed throughout the whole factory process. The temperature of the product and ingredients can have an effect on product safety as well as quality e.g. not achieving a core temperature during cooking. This is not just a quality check it also forms part of the factory HACCP system.





Temperature probes and temperature guns are used to monitor product and ingredient temperatures. A specification will determine what is an acceptable and unacceptable temperature. This check also forms part of the factory HACCP system.





All testing must be documented to monitor quality and food safety. The documents can be used for any investigations.



Revision Activity 4

Name two types of physical testing?