Improve
food & drink sector skills council

643 Principles of Taguchi Linear graphs in a food environment

SQA Unit Code		**H15R 04**
Level 3	**SCQF Level 7**	**SCQF Credit value 4**

Unit Summary
This unit is about understanding the principles of Taguchi linear graphs as part of your organisation's drive to achieve excellence in food and drink manufacture and/or supply operations. This is important to the productivity and success of manufacture, processing and supply of food and drink within the food supply chain. Understanding current operational practice is central to the implementation of change, improvement, new practice, targets and a performance driven culture.

You will need to understand the principles and application of Taguchi linear graphs within improvement projects. You will need to know how to accurately present findings of analysis to relevant people within the organisation, including senior management. You will need to comply with your company policy for improvement, take responsibility for your actions, and refer any issues outside of the limit of your authority to others.

This unit is for you if your role requires you to analyse the performance of current operational practice in food and drink manufacture or supply. You may be a front line manager or supervisor and/or have responsibilities for all or part of the production/supply process.

In order to be assessed as competent you must demonstrate to your assessor that you can consistently perform to the requirements set out below. Your performance evidence must include at least one observation by your assessor.

You need to know and understand:

Evidence of knowledge and understanding should be collected during observation of performance in the workplace. Where it cannot be collected by observing performance, other assessment methods should be used.

1. How the health, safety and hygiene requirements of a work area can influence the process of analysis
2. The food/drink processing activity that is being analysed
3. What is meant by the following terms: fold over, confounded, alias
4. How to produce Taguchi linear graph designs for a range of arrays
5. What is Alpha risk and Beta risk
6. What is a population and a sample
7. The calculation of suitable sample sizes
8. Why we need to use Taguchi linear graph experimental design
9. How Taguchi linear graph experimental design is used in a Six Sigma improvement

projects 10. How Taguchi linear graph experiments are conducted 11. How to calculate mean, median, mode, standard deviation, range and variance 12. The calculation and graphical display of main effects and interactions 13. How suitable optimal conditions can be identified 14. The creation of action plans to ensure that improvements are implemented 15. The creation of a Taguchi linear graph reports, and the information they should contain Levels of authority linked to problem resolution
Evidence of performance may employ examples of the following assessment: • observation • written and oral questioning; • evidence from company systems (e.g. Food Safety Management System) • reviewing the outcomes of work • checking any records of documents completed • checking accounts of work that the candidate or others have written