

3290 Principles of seafood quality science		
SQA Unit Code		H3JX 04
Level 3	SCQF Level 7	SCQF Credit value 7

Unit Summary

This unit is about the principles of seafood quality science. Good product knowledge is essential if you are to understand and effectively promote the range of seafood products available for retail sale.

This unit is about the physical, biochemical, microbial and other changes that over time impact on the quality of seafood flesh. This includes both intrinsic and extrinsic factors that help to retard or accelerate the changes that play such an important role in the organoleptic quality and safety of seafood flesh

This unit is for you if you require product knowledge of seafood products to support your occupational role in a processing or retail environment.

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.

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.

You need to know and understand:

1. the impact of variations in the live animal - species, age, sex, season, presence of parasites, contaminants
2. impact of harvesting method, live holding regimes and stress
3. physical and biochemical characteristics and composition of fish and shellfish flesh – connective tissue, muscle, unsaturated lipid levels, soluble nitrogen compounds, enzymes
4. differences between white fish, oil rich fish and shellfish, marine and freshwater species
5. typical microflora, the key spoilage organisms and their role in spoilage
6. key biochemicals – Inosine, Hypoxanthine, Xanthine, Uric Acid, TMA, TVB, ATP, ADP and AMP
7. post-mortem changes – pre-rigor, rigor mortis, post-rigour
8. autolysis of flesh and enzyme activity
9. oxidation of lipids, rancidity
10. microbial spoilage and metabolic activities of microbes
11. other post-mortem changes e.g. melanosis, loss of colour, gaping

12. impact of post harvest handling on spoilage including bleeding, gutting, washing, chilling, freezing
13. impact of post harvest processing on quality including temperature reduction, heat treatment, pH and water activity, salt, UHP, irradiation
14. impact of post processing packaging and handling on quality including overwrap, MAP, cook-chill
15. the basis of flavour and odour changes
16. determination of freshness by electrochemical, biochemical, chemical and organoleptic methods, and the advantages and limitations of each
17. shelf life determination
18. nutritional qualities of seafood
19. threats to human health including biotoxins, allergens, parasites, common contaminants
20. food safety, HACCP, quality standards

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