## Title
Describe seafood microbiology, interpret test data and take appropriate action

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<th>Level</th>
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### Purpose
This unit standard is for people working in a seafood operation.

People credited with this unit standard are able to describe: the nature and growth requirements of microorganisms and their effect seafood product; microorganisms in relation to food borne disease in seafood products; and sampling and testing to determine food safety in seafood product. They are also able to interpret test data, describe procedures in the event of exceeded food safety limits and take appropriate action.

### Classification
Seafood > Seafood Processing

### Available grade
Achieved

### Guidance Information

1. All evidence presented in this unit standard must be in accordance with:
   - Workplace procedures;
   - Animal Products Act 1999;
   - Food Act 2014;
   - Health and Safety at Work 2015;
   - and any subsequent amendments.

2. Definitions
   - Total Plate Count (TPC) may also be known as Total Viable Count (TVC) or Aerobic Plate Count (APC).
   - Workplace procedures refer to the policies and procedures set out in a verbal or written form by the employer or organisation. Procedures must be consistent with current legislative requirements and manufacturer’s recommendations or instructions where relevant.

### Outcomes and performance criteria

#### Outcome 1
Describe the nature and growth requirements of microorganisms and their effect on seafood product.

Range: bacteria, yeasts, moulds, viruses, protozoa, algae.
Performance criteria

1.1 Describe the nature of microorganisms.

1.2 Describe the factors that affect growth of microorganisms.
Range factors may include – moisture, temperature, oxygen, nutrients, pH;
evidence of four is required.

1.3 Describe the effect of microorganisms on seafood product.
Range bacteria, yeasts, moulds, viruses, protozoa, algae.

Outcome 2
Describe microorganisms in relation to food borne disease in seafood products.
Range may include – *Escherichia coli*, *Staphylococcus aureus*, *Listeria monocytogenes*, Salmonella species, Campylobacter species, vibrio species, viruses, yeasts, moulds;
evidence of three is required.

Performance criteria

2.1 Describe the major sources of the microorganisms responsible for food borne disease.

2.2 Describe three methods of controlling and preventing microbial growth in seafood products.

Outcome 3
Describe sampling and testing to determine food safety in seafood product.

Performance criteria

3.1 Describe sampling techniques used to determine food safety of seafood product.

3.2 Describe the tests that can be used to determine food safety in seafood product.
Range may include tests for – TPC, Faecal coliforms, *Escherichia coli*,
*Staphylococcus aureus*, *Listeria monocytogenes*, Salmonella species, Campylobacter species, virus, vibrio species, yeasts,
moulds;
evidence of three is required.
Outcome 4

Interpret test data, describe procedures in the event of exceeded food safety limits and take appropriate action.

Performance criteria

4.1 Interpret test data to determine if food safety limits are met.

Range may include – TPC, Faecal coliforms, *Escherichia coli*; *Staphylococcus aureus*, *Listeria monocytogenes*, Salmonella species, Campylobacter species, virus, vibrio species, yeasts, moulds; evidence of three is required.

4.2 Describe the investigation procedures required in the event food safety limits are exceeded.

4.3 Take action if test data indicates food safety limits have been exceeded, Range may include – TPC, Faecal coliforms, *Escherichia coli*, *Staphylococcus aureus*, *Listeria monocytogenes*, Salmonella species, Campylobacter species, virus, vibrio species, yeasts, moulds; evidence of three is required.

4.4 Describe the actions to take to prevent reoccurrence in accordance with workplace procedures.

| Planned review date | 31 December 2023 |

### Status information and last date for assessment for superseded versions

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<th>Process</th>
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**Consent and Moderation Requirements (CMR) reference**

0123


**Comments on this unit standard**

Please contact the Primary Industry Training Organisation standards@primaryito.ac.nz if you wish to suggest changes to the content of this unit standard.