Title	**Describe hatchery techniques used in the New Zealand aquaculture industry**		
Level	**4**	**Credits**	**15**

Purpose	People credited with this unit standard are able to describe: the principles of larval rearing in a hatchery for the selected aquatic species; the appropriate food and feeding system used for growth of a selected aquatic species for the period after hatching or spawning; the use and cleaning of hatchery plant and equipment for a selected aquatic species; and the water quality parameters and hatchery layout for a selected aquatic species in an aquaculture hatchery facility.

Classification	Seafood > Aquaculture

Available grade	Achieved

Guidance Information

1 Legislation relevant to this unit standard includes but is not limited to:
- Animal Products Act 1999;
- Health and Safety at Work Act 2015;

and any subsequent amendments.

2 Definition
Spawning refers to induced spawning in a hatchery situation.
Company requirements refer to instructions to staff on policy and procedures which are communicated in verbal or written form. These requirements may include but are not limited to – manufacturer's' procedures, company safety procedures, throughput, and industry codes of practice and standards. Company requirements must include legislative requirements.

3 For the purpose of this unit standard one aquatic species must be selected from one of the following categories: molluscs, fin fish, crustaceans, and echinoderms in the New Zealand aquaculture industry. The same species must be described for each performance criteria.

4 All evidence presented in this unit standard must be in accordance with company requirements.

Outcomes and performance criteria

Outcome 1

Describe the principles of larval rearing in a hatchery for the selected aquatic species.

Performance criteria

1.1 Describe the stages and timing of larval rearing from larval phase to juvenile stage.

1.2 Describe the management techniques to optimise larval rearing in a hatchery.

Range management techniques may include but are not limited to – management of stocking density, photoperiod.

1.3 Describe the equipment used for larval rearing in a hatchery.

Outcome 2

Describe the appropriate food and feeding system used for growth of a selected aquatic species for the period after hatching or spawning.

Performance criteria

2.1 Describe the food type used for a selected aquatic species.

Range food may include but is not limited to – pellet feed, crumble feed, cultured feed.

2.2 Describe the relevant factors for the chosen feeding system to ensure optimum larval growth.

Range cultured feeding system factors may include but are not limited to – time from set up to production of feed, lighting requirements, feeding culture systems, water flow and temperature, growth media or nutrients required for harvesting feed, plant and equipment, hygiene, feeding frequency, delivery method;
pellet or crumble feeding system factors may include but are not limited to – when to begin feeding, the feed size, feed compliance tests, feeding frequency, delivery method;
evidence of four factors is required.

Outcome 3

Describe the use and cleaning of hatchery plant and equipment for a selected aquatic species.

Performance criteria

3.1 Describe laboratory equipment used in a hatchery for routine monitoring, in terms of what it is used for and how it is used.

Range may include but is not limited to – water sampling equipment, water monitoring equipment, microscopes, counting equipment, scales.

3.2 Describe the cleaning procedures for hatchery plant and equipment.

Range may include but is not limited to – chemical storage, laboratory equipment, chemicals, cleaning.

3.3 Describe the safe work practices used in a hatchery.

Range may include but is not limited to – rinsing techniques, risk to animals, health of stock

Outcome 4

Describe the water quality parameters and hatchery layout for a selected aquatic species in an aquaculture hatchery facility.

Range water quality parameters may include but are not limited to – dissolved oxygen, nitrites, nitrates, ammonia, salinity, temperature, turbidity, suspended solids, pH and pathogens;
evidence of four is required.

Performance criteria

4.1 Describe the optimal water quality limits for a selected aquatic species.

4.2 Describe the impact of less-than-optimal water quality on a selected aquatic species.

4.3 Describe remedial actions for loss of water quality for a selected aquatic species.

4.4 Describe the basic layout of the hatchery plant and equipment that optimises the health and wellbeing of the stock.

Range may include but is not limited to – tanks, water flow, filters, ultraviolet disinfection units, pumps, chemical storage, equipment arrangement, feed culture, discharge system, waste disposal, biosecurity;
evidence of four is required.

Planned review date	31 December 2028

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 March 2002	31 December 2024
Review	2	25 February 2008	31 December 2024
Review	3	12 December 2008	31 December 2024
Review	4	28 October 2021	N/A
Rollover	5	29 February 2024	N/A

Consent and Moderation Requirements (CMR) reference	0123

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact the Muka Tangata - People, Food and Fibre Workforce Development Council qualifications@mukatangata.nz if you wish to suggest changes to the content of this unit standard.