

Modification history

Release	Comments
Release 1	This version released with SFI Seafood Industry Training Package Version 1.0.

SFIAQU502	Develop and implement an aquaculture breeding strategy
Application	<p>This unit of competency describes the skills and knowledge required to develop and implement a breeding strategy. It includes the ability to determine breeding objectives, establish a broodstock or progeny selection criteria and assess the effectiveness of the program.</p> <p>This unit applies to individuals who have responsibility for the technical and management requirements of the breeding facility and program for an aquaculture workplace.</p> <p>No occupational licensing, legislative or certification requirements apply to this unit at the time of publication.</p>
Prerequisite Unit	Nil
Unit Sector	Aquaculture (AQU)

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine breeding objectives	1.1 Determine breeding strategy requirements considering the capacity of the facility, relevant characteristics of cultured or held stock and marketing and production plans 1.2 Interpret and use breeding and production records as the base line for breeding strategy 1.3 Assess the economic feasibility of breeding objectives 1.4 Determine selection aims or goals according to workplace or customer requirements
2. Determine and apply selection criteria	2.1 Determine visual and objective methods of good stock selection 2.2 Establish criteria for female and male selection 2.3 Cull broodstock that fail to meet selection according to workplace procedures 2.4 Identify broodstock and genetic material and send samples for analysis by external laboratory, in line with workplace practices 2.5 Assess genetic and disease implications from results received
3. Manage the breeding program	3.1 Manage breeding facilities to meet veterinary guidelines and broodstock requirements 3.2 Implement broodstock maturation or spawning treatments according to workplace procedures 3.3 Determine fertilisation and progeny rearing strategy according to breeding objectives 3.4 Identify stock for sale according to the breeding strategy and legislative and permit requirements 3.5 Select replacement broodstock according to the breeding strategy
4. Review the breeding program	4.1 Research mechanisation or automation of process or activity, including the use of specialised contract services, and make recommendations to management 4.2 Analyse data from stock selection and sales to evaluate the success of the breeding program against breeding strategy and objectives 4.3 Update the breeding plan to detail all procedures for changes in the breeding objectives 4.4 Inform personnel on the implementation of the breeding plan

Foundation Skills	
<i>This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.</i>	
Skill	Description
Reading	<ul style="list-style-type: none"> • Research and analyse technical information from a range of sources • Interpret laboratory reports and workplace documentation
Writing	<ul style="list-style-type: none"> • Record and compile accurate and detailed stock records • Document reports and plans using clear language and agreed formats
Numeracy	<ul style="list-style-type: none"> • Analyse statistical breeding data and laboratory reports • Calculate percentage per proportion of sexes used, and traits passed on to progeny • Analyse financial information and trends in sales
Oral communication	<ul style="list-style-type: none"> • Participate in verbal exchanges to convey and explain information clearly using language appropriate for the audience
Navigate the world of work	<ul style="list-style-type: none"> • Work independently and collectively within broad parameters taking responsibility for plans, decisions and outcomes relating to breeding stock
Interact with others	<ul style="list-style-type: none"> • Select and use appropriate communication protocols and conventions when seeking or sharing information with others
Get the work done	<ul style="list-style-type: none"> • Use systematic, analytical processes to identify and solve problems and make decisions relating to stock breeding program • Use workplace digital systems and tools to access, organise, and analyse information relevant to stock breeding program

Unit Mapping Information			
Code and title current version	Code and title previous version	Comments	Equivalence status
SFIAQU502 Develop and implement an aquaculture breeding strategy	SFIAQUA502C Develop and implement an aquaculture breeding strategy	Updated to meet Standards for Training Packages. Amendments to elements and performance criteria for clarity.	Equivalent unit

Links	Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=e31d8c6b-1608-4d77-9f71-9ee749456273
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TITLE	Assessment requirements for SFIAQU502 Develop and implement an aquaculture breeding strategy
Performance Evidence	
<p>An individual demonstrating competency must satisfy all the elements and performance criteria of this unit. There must be evidence that the individual has developed and implemented at least one aquaculture breeding strategy including:</p> <ul style="list-style-type: none"> • setting breeding objectives • designing, trialling and documenting breeding programs <ul style="list-style-type: none"> • selecting desired traits and genetic material • selecting suitable female and male broodstock • managing breeding facilities and program • assessing effectiveness of strategy • reporting outcomes to a range of personnel. 	
Knowledge Evidence	
<p>An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:</p> <ul style="list-style-type: none"> • assessment criteria to determine the effectiveness of breeding processes • basic principles of genetics relevant to breeding program • breeding and life cycle biology of cultured or held stock • breeding strategy, techniques and programs which maximise genetic gain • economic assessment techniques of production characteristics • genetic development in stock • risks associated with breeding program • options for mechanisation or automation of process or activity • options for use of specialised contract services. 	
Assessment Conditions	
<p>Assessment of this unit of competency must take place under the following conditions:</p> <ul style="list-style-type: none"> • physical conditions: <ul style="list-style-type: none"> • skills must be demonstrated in an aquaculture workplace or an environment that accurately represents workplace conditions • resources, equipment and materials: <ul style="list-style-type: none"> • broodstock handling facility • broodstock and genetic material • technology for researching, recording and documenting information • specifications: <ul style="list-style-type: none"> • data relating to breeding program • relationships: <ul style="list-style-type: none"> • interactions with senior personnel. <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>	
Links	Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=e31d8c6b-1608-4d77-9f71-9ee749456273