



Australian Government

Department of Education, Employment and Workplace Relations

AHCBEK402A Perform queen bee artificial insemination

Release: 1

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Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers performing queen bee artificial insemination and defines the standard required to: collect semen from drone honey bees; inseminate queen bees; manage queen bees after insemination; maintain required hygiene standards; keep records in relation to Artificial Insemination (AI) program.
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Application of the Unit

Application of the unit	This unit applies to specialists who provide instrumental insemination services for the beekeeping industry.
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Determine breeding method	1.1.Options for artificial breeding are reviewed to determine most suitable and affordable method in line with breeding objectives. 1.2.Artificial breeding option is selected and matched to resources so as to meet enterprise's queen and drone management program. 1.3.Resource requirements of breeding programs are identified, sourced and arranged. 1.4.Program schedules are prepared according to available resources. 1.5.Suitable clothing and work environment for self and breeding support staff are made available and comply with Occupational Health and Safety (OHS) and enterprise requirements.
2. Implement breeding method	2.1.Genetic material is obtained from reliable and legitimate sources. 2.2.Genetic material is received, checked and stored to ensure maximum viability and program outcomes, according to industry codes of practice. 2.3.Rearing times are managed so that queen bees and drones are of appropriate age and condition when AI is scheduled to occur. 2.4.Semen is collected from drones and queens are prepared and inseminated using hygienic techniques to minimise risk of contamination. 2.5.After insemination, queen is placed in a colony of suitable strength and monitored to determine whether further insemination or treatments with carbon dioxide are required.
3. Monitor and maintain program	3.1.Adjustments in genetic material transfer practices are reviewed to enhance success of future programs. 3.2.Data on genetic material transfer programs is documented and maintained according to enterprise requirements. 3.3.Success rates are determined from breeding objectives and are calculated and used to determine success of AI program. 3.4.Information is supplied to relevant authorities to promote research and improvements in industry practice. 3.5.Necessary modifications to queen and drone management program are identified and recorded to

ELEMENT	PERFORMANCE CRITERIA
	assist continuous improvement processes.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- identify appropriate AI techniques
- determining AI timing
- schedule and obtain resources for insemination activities and
- identifying queen bee laying fertilised eggs
- performing AI
- preparing queen and drone honey bees for AI
- match queen and drone cycles to resource availability
- use literacy skills to read, interpret and follow organisational policies and procedures, develop sequenced written instructions, record accurately and legibly information collected and select and apply procedures to a range of tasks
- use oral communication skills/language competence to fulfil the job role as specified by the organisation including questioning, active listening, asking for clarification, negotiating solutions and responding to a range of views
- use numeracy skills to estimate, calculate and record routine and more complex workplace measures and data
- use interpersonal skills to work with others and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

Required knowledge

- artificial breeding methods and benefits, and limitations of each method
- anatomy and physiology of reproductive organs and reproductive process in queen and drone honey bees
- enterprise and industry identification system for queen and drone honey bees and semen
- enterprise and industry policies with regard to AI, and the recording and reporting requirements
- honey bee health and abnormalities
- knowledge of enterprise breeding programs
- preparation requirements for AI
- principles of genetics

REQUIRED SKILLS AND KNOWLEDGE

- physical resource requirements and how to safely handle and transport them
- relevant commonwealth, state or territory legislation, regulations and codes of practice with regard to workplace OHS
- semen collection and homogenising processes
- semen thawing techniques.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy holistically all of the requirements of the performance criteria and required skills and knowledge and include achievement of the following:

- collect semen from drone honey bees
- inseminate queen bees
- manage queen bees after insemination
- maintain required hygiene standards
- keep records in relation to AI program.

Context of and specific resources for assessment

Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole.

Performance relates to and may include:

- all equipment and processes used in artificial insemination of queen bees.

Unit Sector(s)

Unit sector

Beekeeping

Co-requisite units

Co-requisite units		

Competency field

Competency field	
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