



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **RTF3014A Implement a propagation plan**

**Release: 1**

## **RTF3014A Implement a propagation plan**

### **Modification History**

Not applicable.

### **Unit Descriptor**

This competency standard covers the process of plant propagation by both sexual and asexual methods.

Competency involves the application of knowledge and skills to a range of propagation tasks, such as the selection of suitable propagation material, selection and preparation of propagation media, and the application of preparatory treatments. The work is carried out within routine methods and procedures under limited supervision, with checking only related to overall progress. Some discretion and judgement is required in the selection of equipment, work organisation, services, actions and achieving outcomes within time constraints.

### **Application of the Unit**

Not applicable.

### **Licensing/Regulatory Information**

Not applicable.

### **Pre-Requisites**

Not applicable.

### **Employability Skills Information**

Not applicable.

### **Elements and Performance Criteria Pre-Content**

Not applicable.

# Elements and Performance Criteria

## Elements and Performance Criteria

Element	Performance Criteria
1 Prepare for propagation activities	<p>1.1 <b>Workplace information</b> is interpreted and tasks organised to achieve daily work routine within time constraints.</p> <p>1.2 <b>Tools, equipment and machinery</b> are selected according to propagation method and enterprise work procedures.</p> <p>1.3 Growing environment is <b>prepared</b> to suit species and propagation method.</p> <p>1.4 <b>Hygiene practices</b> are implemented according to enterprise guidelines.</p> <p>1.5 <b>OHS hazards</b> are identified, risks assessed, controls implemented and reported to the supervisor.</p>
2 Select propagation material	<p>2.1 Parent plant is identified and selected according to health, vigour and desired characteristics.</p> <p>2.2 Propagation material is selected and collected according to the propagation method, and species.</p> <p>2.3 <b>Conditioning and storage requirements</b> are selected to ensure maximum viability of propagating material.</p>
3 Prepare propagating media	<p>3.1 Media components are selected according to manufacturer directions, enterprise guidelines, propagation method and plant needs.</p> <p>3.2 Propagation media is tested to ensure the product complies with <b>media specifications</b>.</p> <p>3.3 Media and components are handled according to <b>OHS requirements</b>.</p> <p>3.4 <b>Storage requirements</b> for the unused propagation media are selected.</p>

- 4 Propagate plants
  - 4.1 Propagation material is **prepared** according to the propagation method and species.
  - 4.2 **Propagation techniques** are performed according to plant species and enterprise guidelines.
  - 4.3 Plants are handled in a way that minimises damage.
  - 4.4 **After care** is applied to suit the media conditions, plant requirements and propagation techniques employed.
- 5 Complete propagation operations
  - 5.1 Ensure work site is cleaned according to hygiene requirements.
  - 5.2 **Waste** is collected and disposed of or recycled to minimise damage to the external environment in accordance with enterprise guidelines.
  - 5.3 **Records** are completed accurately and at the required time according to enterprise guidelines.

## Required Skills and Knowledge

Not applicable.

## Evidence Guide

### What evidence is required to demonstrate competence for this standard as a whole?

Competence in propagating plants requires evidence that appropriate propagation material can be selected, growing media and growing site can be prepared, and an appropriate propagation method can be implemented.

The skills and knowledge required to propagate plants must be **transferable** to a different work environment. For example, this could include different plant species, propagation methods and enterprise requirements.

### What specific knowledge is needed to achieve the performance criteria?

Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts, and to deal with unplanned events. The knowledge requirements for this competency standard are listed below:

quality specifications for parent plants and propagation materials

enterprise and industry hygiene standards required for propagation activities

common problems that may occur while performing propagation activities in a controlled environment, and preventative/corrective action that may apply

propagation techniques required for a range of plants

aftercare requirements for a range of propagated plants

testing methods applied to propagation media

preferred types of propagation media for different species.

**What specific skills are needed to achieve the performance criteria?**

To achieve the performance criteria, some complementary skills are required. These skills are:

liaising with other work areas and customers

identifying and assessing hazards in the work area

recognising and rectifying problems and anomalies with parent plants, propagation material, propagation media, equipment and materials

propagation techniques for a range of plants

preparing, mixing and using chemicals as required

interpreting specifications and industry codes of practice.

**What processes should be applied to this competency standard?**

There are a number of processes that are learnt throughout work and life, which are required in all jobs. They are fundamental processes and generally transferable to other work functions. Some of these are covered by the **key competencies**, although others may be added. The questions below highlight how these processes are applied in this competency standard. Following each question a number in brackets indicates the level to which the key competency needs to be demonstrated where 0 = not required, 1 = perform the process, 2 = perform and administer the process and 3 = perform, administer and design the process.

**1. How can communication of ideas and information (1) be applied?**

Ideas and information relating to work issues, tasks and problems may be discussed with suppliers, end users and members of the work team.

This could include giving instructions for propagation support or discussing appropriate treatments, for example, with suppliers or customers.

2. How can **information be collected, analysed and organised (1)**?

Information relating to propagation schedules and plant requirements may be accessed from management and interpreted so that daily work actions and outcomes can be organised within required time constraints.

Problems and anomalies with daily work routines should be recognised and corrected or reported.

3. How are **activities planned and organised (1)**?

Production plans and daily work instructions may need to be reviewed before and between work periods in order to confirm availability of appropriate equipment, planting materials and propagation media. Work teams may need to be organised and tasks allocated in order to achieve production target.

4. How can **team work (1)** be applied?

Meeting production requirements may require the co-ordination of team activities.

5. How can the use of **mathematical ideas and techniques (1)** be applied?

Mathematical concepts may need to be used to calibrate spray equipment; and calculate production statistics and quantities of treatment to apply.

6. How can **problem-solving skills (1)** be applied?

Problems may arise regarding poor germination or strike rate, for example, which should be recognised and resolved either by implementing preventative/corrective action or reporting to management.

7. How can the **use of technology (1)** be applied?

The testing of propagation media and monitoring of the propagation environment may require the use of measuring equipment such as pH probes. Data bases may be used to communicate and keep records.

**Are there other competency standards that could be assessed with this one?**

This competency standard **could** be assessed on its own or in combination with other competencies relevant to the job function.

There is essential information about **assessing this competency standard for consistent performance** and **where and how it may be assessed**, in the Assessment Guidelines for this Training Package. All users of these competency standards must have **access** to the **Assessment Guidelines**. Further advice may also be sought from the relevant **sector booklet**.



## Range Statement

### Range of Variables

The Range of Variables explains the range of contexts within which the performance and knowledge requirements of this standard may be assessed. The scope of variables chosen in training and assessment may depend on the work contexts

What **propagation activities** may be relevant to this standard?

Propagation may include sexual and asexual methods of propagation including tissue culture.

What **enterprise work procedures** may apply to this standard?

Work procedures will be based on sound horticultural principles and practices and may include supervisor's oral or written instructions, propagation program, enterprise standard operating procedures (SOPs), specifications, production schedules, routine maintenance schedules, work notes, product labels, and Material Safety Data Sheets (MSDSs); Integrated Pest Management (IPM) programs; manufacturers' service specifications and operator's manuals; waste disposal, recycling and re-use guidelines; and OHS procedures.

What **tools and equipment** may be required for conducting propagation activities?

Tools and equipment may include secateurs, knives and other cutting instruments, sharpening stone, linear measure, grafting machine, plastic containers and trays, scalpel, laminar flow cabinet, autoclave, alcohol, vermiculite boxes, wheelbarrow, trolley, mechanical trolley, shovel, water spray container, dibblers and rubbish bins.

How might the growing environment be **prepared**?

Preparation may include setting temperatures controls, setting wind machines, and setting humidity levels.

What **hygiene practices** may be applied to this standard?

Hygiene practices may include storing different types of media separately to avoid cross contamination, cleaning and disinfecting work areas, tools and equipment between batches, access restrictions, and footbaths.

What **OHS hazards** might apply to this standard?

OHS hazards may include using hazardous substances, using sharp tools and equipment, slippery uneven surfaces, and manual

	handling.
What sort of <b>propagation material</b> might apply to this standard?	Propagation material may include seeds, cuttings, spores, rootstock, scion, rootlings, buds, separations/divisions, tissue cultures, rhizomes, and pantalets.
What <b>conditioning and storage requirements</b> may apply to propagation materials?	Conditioning and storage requirements for propagation materials may include bundling, packing and labelling, and controlling environmental parameters such as moisture, air, humidity and temperature.
What <b>propagating media</b> may be used?	Propagating media may include sand, potting mix, agar, gravel, scoria, rock wool, gro-wool, sawdust, pine bark, perlite, vermiculite, and water (hydroponics).
What <b>media specifications</b> may be required for propagation media?	Tests may include pH, drainage, aeration, salinity nitrate levels, water repellence, hormone levels and types, nutrient levels, and sterility.
What <b>OHS requirements</b> may apply to the handling of propagation media and components?	OHS legislation in each state details steps that need to be followed when dealing with hazardous substances. Steps may apply to labelling, MSDSs, equipment used for handling pot media, composts and other organic material; potting areas, and appropriate safety equipment.
What <b>storage procedures</b> might apply to propagation media and components?	Media should be stored in facilities that prevent infestation by root rot organisms, on surfaces and in areas that exclude run-off water and contamination by soil and other contaminated materials; in bins, trailers and trolleys.
What <b>preparatory treatments</b> could be used before commencing propagation activities?	Preparing propagation material may include applying hormones, fungicides, soaking buds, hot water treatment of cuttings, disbudding, hydration, grading, cold/moist stratification, rehydration, heat or chemical disinfestation, breaking seed coat, cleaning, division and sterilisation.
What <b>propagation techniques</b> may be relevant to this standard?	Propagation techniques may include seed, cuttings, layering, growing on tissue cultured plants, division or splitting, budding,

grafting, spores and cloning.

What **after care** might be required?

After care may include application of preventative fungicides, fertilisers, water and nutrients.

What **waste** may be relevant to this standard?

Waste may include pots, discarded propagation material, media waste and chemicals. Waste may be recyclable, re-useable, returnable, or require garbage or toxic handling procedures.

What **records** may need to be maintained in regard to propagation activities?

Records may include number of plants propagated, source material used, variety, clone, batch number, and treatments applied.

For more information on contexts, environment and variables for training and assessment, refer to the Sector Booklet.

## **Unit Sector(s)**

Not applicable.