Australian Government

Department of Education, Employment and Workplace Relations

RTF4015A Plan a propagation program

Release: 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

RTF4015A Plan a propagation program

Modification History

Not applicable.

Unit Descriptor

This competency standard covers the process of planning a propagation program. Planning requires consideration of management and marketing requirements, selection of appropriate propagation techniques and environmental controls, OHS hazards and hygiene standards. Planning is usually undertaken without supervision, and with only general guidance on progress sought by managers. Responsibility for and limited organisation of the work of others may be necessary. Competency is demonstrated by the application of a broad range of skills and detailed underpinning knowledge to planning and propagation processes, such as propagation techniques, plant varieties and cultivars, weed, pest and disease recognition and control, and plant health requirements.

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 Carry out preliminary planning activities for a plant propagation program	1.1 Management and marketing **requirements** are confirmed and understood.
	1.2 Space requirements for propagation program are evaluated.
	1.3 **Propagation techniques** are determined according to species and sound horticultural practice.
	1.4 **Environmental parameters** that impact on propagation are determined.
	1.5 Budget for the propagation program is negotiated with management.
	1.6 **OHS hazards** associated with the propagation program are identified, risks assessed and controls implemented.
2 Develop the propagation plan	2.1 Labour, **materials, equipment and machinery** needs are identified.
	2.2 **Propagation media requirements** are determined according to the propagation method and needs of the plant.
	2.3 **Strategies** to modify environmental conditions are determined according to the type of plant and propagation method used.
	2.4 **Selection criteria** for the propagation material is determined according to the type of plant and propagation method.
	2.5 **Hygiene requirements** for propagation activities are determined.
	2.6 Propagation plan and schedule of activities are communicated clearly to staff.
3 Monitor success of propagation activities	3.1 Variances from plan and scheduled activities are identified and recorded.
	3.2 Propagated plants are **assessed** for health, quality

and viability according to enterprise quality standards.

3.3 **Remedial procedures** are planned to meet marketing objectives and business imperatives.

Required Skills and Knowledge

Not applicable.

Evidence Guide

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

Competence in implementing a propagation plan requires evidence that a schedule of propagation activities can be developed, propagation works can be implemented, and the performance and success of propagation activities can be monitored.

The skills and knowledge required to implement a propagation plan must be **transferable** to a different work environment. For example, this could include different plant types, propagation techniques and enterprise procedures.

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:

OHS hazards associated with undertaking propagation activities, and the controls necessary to remove or minimise risks associated with them

practical understanding of the OHS and environmental issues associated with use and disposal of propagation media

enterprise and industry hygiene standards required for propagation activities, including relevant quarantine regulations

industry and enterprise quality specifications for parent plants and propagation materials

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

processes and techniques for preparing, costing and documenting plans for and scheduling propagation activities

identification, propagation and establishment techniques required for a range of plant varieties and cultivars

monitoring staff performance

Plant Breeders Rights (PBR) and related

	legislation aftercare requirements for a range of propagated plant varieties and cultivars testing methods applied to propagation media preferred types of propagation media for different species chemical, cultural and biological pest, weed and disease control techniques application techniques for chemical and non-chemical intervention or treatments.
What specific skills are needed to achieve the performance criteria?	To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to: conduct literature and consultative research to obtain information about propagation requirements, growth conditions, and marketing implications negotiate and document plans write reports for the understanding of staff, supervisors, clients and contractors calculate the cost, spatial and logistical requirements of all aspects of the propagation works analyse basic statistical data to monitor performance and success of propagation activities.

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** (**3**) be applied?	Marketing objectives, site environmental controls, propagation techniques and budgetary considerations should be communicated with management orally and in writing. There is likely to be negotiation between the planner of the propagation program and management to achieve objectives.
2. How can **information be collected**, **analysed and organised** (**3**)?	Some information will need to be researched and/or obtained from test results. Information addressing the specific requirements of the propagation program should be analysed, and outcomes discussed with management and other members of the work team. Information about the propagation program should be organised and presented as documented plans, written work procedures, timeline chart and schedules for propagation activities.
3. How are **activities planned and organised** (**3**)?	The planning process should proceed in an orderly and efficient manner. Timely and appropriate information needs to be available for decision-making. The propagation plan should reflect the activities required to implement the program.
4. How can **team work** (**3**) be applied?	Planning a propagation program may involve working with other members of a team to achieve the desired outcomes.
5. How can the use of **mathematical ideas and techniques** (**3**) be applied?	Mathematical concepts will be required to measure quantities, distances, depth, and calculate production records, resources, costs, areas, ratios, scales, planting and application rates.

6. How can **problem-solving skills** (**3**) be applied?	Problems relating to vagaries of the growing environment, poor germination or strike rate, plant health, propagation and aftercare techniques, workplace safety, tools, equipment and machinery, team members, inclement weather, hazardous situations and environmental issues, may arise during the revegetation works.
7. How can the **use of technology** (**3**) be applied?	Technology will be required to record, store and communicate ideas and information. It will also be used to research relevant information, obtain and analyse data from soil tests and production statistics, and to produce the propagation plan.

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 contexts within which the performance and knowledge requirements of this standard may be assessed. The scope of variables chosen in particular training and assessment requirements may depend on the work situations available

What **requirements** may management or marketing impose on the propagation plan?	Requirements may include budget limitations, propagation technique, controlling the growing environment; plant species, growth habits and cultural requirements; the purpose or intended use of the propagated plants, maintenance services for propagation after-care, quality specifications and timelines for the program.
What **propagation techniques** might be required?	Propagation techniques may include seed, cuttings, layering, growing on tissue cultured plants, division or splitting, budding, grafting, spores and cloning.
What **environmental parameters** may need to be considered in order to control the growing environment?	Environmental parameters may apply to a field nursery or environmentally controlled structure, and may include temperature, wind, light, humidity and frost.
What **OHS hazards** may be identified as part of the plan for implementing propagation works?	Hazards may include air- and soil-borne micro-organisms, chemicals and hazardous substances, sharp hand tools and equipment, manual handling, solar radiation, dust, noise, machinery and machinery parts, slippery and uneven surfaces.
What **materials**, **equipment and machinery** may be required for conducting propagation activities?	Materials, equipment and machinery may include shade cloth, plastic fencing, tape, support structures, labels, irrigation equipment, heaters, coolers, fans, vents, fogging/misting systems, screens; secateurs, propagation knives, razor blades and other cutting instruments; sharpening stone, strop, linear measure, grafting machine, plastic containers and trays, vermiculite boxes, wheelbarrow, trolley, mechanical trolley, shovel, water spray container, dibblers and rubbish bins.
What **propagation media requirements** may need to be determined in order to meet	Propagation media requirements will be specific to the species and method of propagation, and may need to be determined

plant needs?	using recognised testing procedures for pH, drainage, aeration, salinity, nitrate levels and water repellence to ensure that it meets the needs of the propagation plan. Types of propagation media may include sand, potting mix, gravel, scoria, rock wool, gro-wool, sawdust, pine bark, perlite, vermiculite, water (hydroponics) and conditioners/additives.
What **strategies** may be employed to modify the growing environment?	Strategies that may be employed to modify the growing environment include cooling by manual or automatic processes such as the use of vents, exhaust fans, evaporative coolers, wetting walls; heating by manual or automatic processes such as the use of wall heaters, ducts, heating lines or under-bed heating systems; controlling air circulation to maintain uniform temperatures and relative humidity, such as ventilation or wind breaks; use of artificial light; carbon dioxide enrichment, and irrigation.
What **selection criteria** may be applied to propagation material relevant to this unit?	Selection criteria for propagation material may include company specifications and quality standards; the use of certified parent stock; ensuring parent stock is well nourished and healthy, free from disease, pest, frost or mechanical damage; results from recognised testing procedures, such as leaf tissue analysis; and the season.
What **hygiene requirements** are relevant to propagation activities?	Hygiene requirements may involve hand washing, removing all media and organic matter from production surfaces, tools and equipment; disinfecting production surfaces, tools and equipment; disinfecting/sterilising propagation media; disinfestation and removal of plant and media waste, footbaths; access restrictions and handling practices which minimise cross contamination, including enterprise quarantine policies and legislation.
What processes may be involved when propagated plants are **assessed** during after care?	Assessment will involve inspection, recognised analytical procedures, recording and interpreting production statistics.
What **remedial procedures** may be applied	Remedial procedures may be required in

to propagated plants?	response to damage or loss, pest and disease problems, and marketing requirements, and may include quarantine/isolation procedures, schedule amended, integrated pest management, cultural intervention such as fertilising, misting, tip/root pruning, spraying growth hormones, light manipulation, temperature changes, increased/decreased humidity, tying, staking, taping; removing and disposing of damaged plant material, and irrigation.

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

Unit Sector(s)

Not applicable.