



Australian Government

Department of Education, Employment and Workplace Relations

RTF3021A Maintain nursery plants

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This competency standard covers the process of monitoring and maintaining plants in a wholesale or production nursery.

Plant maintenance work is likely to be undertaken with limited supervision from others, with checking only related to overall progress. The work involves the application of horticultural knowledge and skills to areas such as monitoring environmental parameters, and monitoring and maintaining nursery plants. Plant maintenance is normally done within routines, methods and procedures where 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

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Element	Performance Criteria
1 Monitor and maintain the nursery environment	<p>1.1 Environmental parameters are monitored against the needs of the plants and enterprise guidelines.</p> <p>1.2 Environmental parameters are altered, as required, to meet the needs of nursery plants and market requirements.</p>
2 Determine daily water requirements	<p>2.1 Water requirements are determined according to the needs of the plant and environmental parameters.</p> <p>2.2 Water is applied according to the needs of the crop.</p> <p>2.3 Water requirements of the plant are monitored according to enterprise guidelines.</p>
3 Promote plant growth by intervention	<p>3.1 Potting media is tested to ensure quality specifications are met.</p> <p>3.2 Health of the plant is monitored according to enterprise guidelines.</p> <p>3.3 Plant interventions are undertaken according to marketing plans, appropriate stage of plant growth for the particular intervention, and OHS requirements.</p> <p>3.4 Waste is disposed of with full consideration of the environmental implications.</p> <p>3.5 Records are kept on all maintenance activities according to enterprise requirements.</p>

Required Skills and Knowledge

Not applicable.

Evidence Guide

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

Competence in maintaining nursery plants requires evidence that environmental parameters can be monitored, quality of media for growing can be tested, daily water requirements of plants can be determined, and plant growth can be promoted by intervention.

The skills and knowledge required to maintain nursery plants must be **transferable** to a different work environment. For example, this could include different plants, maintenance requirements and nursery situations.

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:

effects of environmental parameters on plant growth

methods of calculating daily water needs

relationship between plant water needs and environmental parameters

characteristics of various types of potting media

factors affecting the growth of nursery plants

optimum growing conditions for a range of plants in a nursery

quality parameters for a range of nursery plants

symptoms of unhealthy plants

basic plant physiology including the principles of transpiration, water intake, nutrient uptake, photosynthesis, respiration, and translocation

effect of different pruning and intervention methods

processes for modifying environmental parameters

phenological stages of plant growth

treatments required by plants at different phenological stages and environmental parameters

OHS hazards and the associated risks when maintaining plants

environmental impacts of applying plant interventions.

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:

- select, fit and use appropriate personal protection clothing and/or equipment
- liaise with other work areas and customers
- prepare, mix and use chemicals as required
- interpret and record required workplace information
- operate irrigation systems.

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 or discussing watering system requirements, for example, with suppliers.

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

Information relating to daily site and plant maintenance routines 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 select appropriate equipment, materials and treatment for plant maintenance activities. Work teams may need to be organised and tasks allocated.

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 monitor growing conditions, to calibrate spray equipment and calculate quantities of treatment to apply.

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

Problems, particularly of a horticultural nature, 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 monitoring of environmental parameters may require the use measuring equipment and data bases.

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 areas may be considered part of the **nursery environment**? Nursery environment may include glasshouses, shadehouses, and hardening-off areas.

What **environmental parameters** are to be taken into account for this standard? Environmental parameters may include light, temperature, humidity and wind.

What **market requirements** may require the modification of environmental parameters? Market requirements may include size of plant, extent of foliage, colour, time of sale, and number of blooms.

How are daily **water requirements** determined? Plant water needs are determined using water monitoring devices or physical observation applying mathematical formulas.

What needs to be **monitored** to ensure plant water requirements are maintained? Monitoring plant water needs may include soil moisture, condition and size of plant, and environmental parameters.

What **enterprise guidelines** may be relevant to this standard? Enterprise guidelines may include standard operating procedures (SOPs), specifications, production plans, work notes, Material Safety Data Sheets (MSDSs), or verbal direction from manager, or supervisor.

What **potting media specifications** are relevant to this standard? Potting media specifications may include pH, drainage, aeration, salinity nitrate levels, water repellence, and nutrient content.

How is the overall **health of the plant** monitored? Monitoring the health of the plants may include checking the thickness of stems, evidence of pests and diseases, number, strength and distribution of new roots, maturity and distribution of shoots, visually complete and robust graft union, and no signs of dehydration.

What **plant interventions** may be utilised to promote plant growth? Interventions may include pesticides, fungicides, fertilisers, hormones, pruning, hardening off, irrigation, mulching, removing weeds, removing dead material, aeration, staking, tying, spacing and

thinning.

What **OHS requirements** apply to this standard?

OHS requirements may include handling hazardous substances, the use and maintenance of equipment and machinery, and the use of protective clothing.

What **environmental considerations** may be relevant to this standard?

Environmental considerations may include disposal of chemical containers and left over chemicals, and run off from washing and cleaning equipment and machinery.

What workplace **records** are relevant to this standard?

Workplace records may include spray diaries, types of interventions applied, accident reports, and machinery log.

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

Unit Sector(s)

Not applicable.