### Training Package
**Amenity Horticulture (RTF03)**

### Title
**Tend nursery plants**

### Unit code
**RTF2024A**

This competency standard covers the process of tending containerised nursery plants. Plant maintenance is likely to be carried out under routine supervision with intermittent checking. Responsibility for some roles and co-ordination within a team may be required. Competency is demonstrated by the application of knowledge and skills to a range of plant maintenance tasks. Maintenance of nursery plants usually follows established enterprise guidelines.

### HSC Indicative Hours
10

### Evidence Guide

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

Competence in tending nursery plants requires evidence that a nursery environment can be maintained, daily water requirements can be applied, plants can be treated and workplace information can be recorded. The skills and knowledge required to tend nursery plants must be **transferable** to a different work environment. For example, if plants can be tended in a glasshouse, it must also be evident that plants can be tended in a shade house or hardening-off area.

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<thead>
<tr>
<th>What specific knowledge is needed to achieve the performance criteria?</th>
<th>What specific skills are needed to achieve the performance criteria?</th>
<th>Are there other competency standards that could be assessed with this one?</th>
<th>Assessment guide</th>
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</table>
| 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:  
- environmental requirements of a range of containerised plants growing in a nursery setting  
- applied understanding of the importance of hygiene and quality control when tending nursery plants  
- common problems that may occur with containerised plants in a controlled environment and their treatment  
- Nursery Industry Water Management Best Practice | To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complimentary skills are required. These include the ability to:  
- participate in teams and contribute to team objectives  
- read and interpret enterprise work procedures  
- communicate effectively with team members and supervisor  
- measure quantities and calculate application rates  
- minimise noise, dust and water run-off to prevent nuisance-level environmental disturbance. | This competency standard could be assessed on its own or in combination with other competencies relevant to the job function, for example:  
RTC2404A Treat plant pests, diseases and disorders  
RTC2706A Apply chemicals under supervision  
RTC2016A Recognise plants | 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. |

### Key Terms and Concepts
- common plant problems
- enterprise work procedures
- environmental implications
- hazard identification
- hygiene practices
- irrigation system
- manual handling techniques
- Material Safety Data Sheet (MSDS)
- nursery environment
- Nursery Industry Water Management Best Practice Guidelines, 1997
- nursery plants
- nursery setting
- occupational health and safety (OHS)
- performance parameters
- personal protective equipment (PPE)
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<tr>
<td>Guidelines, 1997 • principles and operations of a range of irrigation systems used in nurseries • methods of disposing of waste to minimise damage to the external environment.</td>
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<td>• Pesticides Act 1999 (NSW)</td>
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<td>• plant growth and health requirements</td>
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<td>Element</td>
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<td>1</td>
<td>Maintain the nursery environment</td>
<td>1.1 <strong>OHS hazards</strong> in the <strong>nursery environment</strong> are identified, risks assessed and reported to the supervisor.</td>
<td>The Range of Variables explains the context 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. For more information on contexts, environment and variables for training and assessment refer to the Sector Booklet. What <strong>OHS hazards</strong> may be associated with tending nursery plants? Hazards may include the use of chemicals and hazardous substances, sharp tools, manual handling, solar radiation and operating spray equipment. What areas may be considered part of the <strong>nursery environment</strong>? The nursery environment may include glasshouses, shade houses and hardening-off areas.</td>
<td><strong>Learning experiences for the HSC must address:</strong> Nursery environments including:  - glasshouses  - shade houses  - hardening-off areas. An awareness of potential hazards including:  - physical  - unsafe tools and equipment  - uneven surfaces  - fatigue  - noise  - dust  - vehicles  - exposed moving machinery parts  - obstacles  - biological  - plant allergy  - hazardous substances including cleaning agents and flammable liquids  - insects  - spiders  - snakes  - ergonomic  - inappropriate use of tools/equipment  - poor manual handling  - repetitive strain  - environmental  - climate  - solar radiation  - psychological  - dealing with emergencies  - working alone  - isolation. A basic understanding of risk assessment:  - identify hazards  - assess associated risks  - strategies to control/eliminate risks.</td>
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<td>1.2</td>
<td><strong>Plant growth and health requirements</strong> are clarified with the supervisor.</td>
<td>What is covered by <strong>plant growth and health requirements</strong>? Plant growth requirements may include watering, light levels, fertiliser regime, pruning and shaping, repotting, and staking. What types of <strong>nursery plants</strong> may be relevant to this standard? Nursery plants may include containerised, balled and bagged, in-ground, aquatic, stock plants, cuttings and rootlings.</td>
<td><strong>Learning experiences for the HSC must address:</strong> An understanding of the growth and health requirements for a range of nursery plant including: - water requirements - watering systems including ▪ watering to the required amount ▪ consideration of water restrictions ▪ watering roster - temperature requirements ▪ cooling in summer ▪ heating in winter - light levels ▪ artificial ▪ natural - fertiliser - pruning and shaping - staking - re-potting.</td>
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<td>1.3</td>
<td><strong>Irrigation system components</strong> are serviced and faulty parts are repaired or replaced.</td>
<td>What types of <strong>irrigation system</strong> may be relevant to this standard? Irrigation systems may include ebb and flow, sprinklers, capillary beds, sprayers and drippers. What <strong>irrigation system components</strong> may require servicing? Irrigation system components may include pumps, lines, pipes, sprinklers, sprinkler heads, solenoids, filters, controllers, sprayers and drippers.</td>
<td><strong>Learning experiences for the HSC must address:</strong> Knowledge of a range of irrigation systems including: - ebb and flow - sprinklers - capillary beds - spray mist - drippers. The purpose and function of irrigation system components including: - pumps - lines - pipes - sprinklers - sprinkler heads - solenoids - filters - controllers - sprayers - drippers. Servicing of irrigation systems and components including:</td>
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| 1.4              | **Performance parameters** of the irrigation system are checked to ensure optimum performance. | What **performance parameters** should be checked to ensure the effective operation of the irrigation system? Checks may include identifying dry spots and blockages, water dumping, abnormal water flow, and leaking heads, lines and pipes. | **Learning experiences for the HSC must address:** Signs of ineffective operation of the irrigation system including:  
- dry spots  
- blockages  
- abnormal water flow  
- leaking heads, lines and pumps  
- incorrect nozzles. |
| 1.5              | Temperature controls are monitored to ensure specified temperatures are maintained.     |                                                                                                                     |                                                                                                               |
| 1.6              | **Nursery hygiene practices** are followed to minimise risk of contamination.          | What **nursery hygiene practices** should be considered when tending plants? Hygiene practices may include removing weeds, dead or diseased plant material; washing the work area on transfer of plants; disinfecting tools, equipment and work areas, and using foot baths on entry to different work areas. | **Learning experiences for the HSC must address:** Nursery hygiene practices including:  
- personal hygiene  
- disinfecting production surfaces, tools and equipment  
- use of footbaths  
- restricting production site access  
- limit handling of plant material  
- use of healthy propagation material  
- use of sterilised potting media  
- removal of weed and dead or diseased plant material  
- washing work areas. |
| 2.1              | Suitable **personal protective equipment (PPE)** is selected, used and maintained.      | What **personal protective equipment (PPE)** may be required to tend nursery plants? Personal protective equipment may include hat, boots, overalls, gloves, sunscreen lotion, goggles, face mask, respirator, spray jacket or suit. | **Learning experiences for the HSC must address:** The selection, use, maintenance and storage of personal protective equipment (PPE) appropriate to the work task including:  
- footwear  
- head protection – hard hat, sun hat and helmet. |
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<td>2.2</td>
<td><strong>Common problems in nursery plants</strong> are recognised, and rectified and/or reported to the supervisor.</td>
<td><strong>What common problems</strong> may be encountered during plant maintenance operations? Common problems may include dehydration, pests, diseases, nutrient deficiencies and deformed plants. <strong>What types of nursery plants</strong> may be relevant to this standard? Nursery plants may include containerised, balled and bagged, in-ground, aquatic, stock plants, cuttings and rootlings.</td>
<td><strong>Learning experiences for the HSC must address:</strong> Knowledge of the causes of common plant problems including: * water stress and wilting * pests * diseases * nutrient deficiencies * deformed plants. Techniques used to rectify common plant problems including: * recognition of symptoms * determining likely cause(s) * quarantining problem plants * plant curing or disposal * plant monitoring, including monitoring surrounding plants for spread of symptoms.</td>
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<td>2.3</td>
<td><strong>Tools and equipment</strong> are selected and used for plant maintenance.</td>
<td><strong>What tools and equipment</strong> are likely to be used for plant maintenance? Tools and equipment may include secateurs,</td>
<td><strong>Learning experiences for the HSC must address:</strong> Knowledge of tools and equipment and their use including:</td>
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| 2.4     | **Treatments** are applied to assist plant growth as directed by the supervisor. | Water spray containers, dibblers, sprayers, plant supports, ties and rubbish bins. | - securers  
- knives for trimming leaves and roots  
- pots, planter bags and trays  
- media components  
- bins  
- trailers  
- wheelbarrow  
- trolley  
- shovel/trowels  
- plant supports and ties  
- dibbler stick for transplanting seedlings and small plants  
- hoses and watering cans. |
| 2.5     | **Water is applied** in the quantity and method specified by **enterprise work procedures**. | What treatments are likely to be selected and applied to nursery plants?  
Treatments may include pesticides, fungicides, fertiliser, mulching, removing weeds, removing dead material, tip pruning, formative pruning, aeration, staking, tying, spacing and thinning. | Learning experiences for the HSC must address:  
An understanding of a range of treatments including:  
- pesticides and fungicides  
- fertilisers  
- mulching  
- removing weeds and dead material  
- tip and/or formative pruning  
- aeration  
- staking  
- tying  
- spacing and thinning.  
Safe use and application of pesticides, fungicides and fertilisers according to:  
- supervisor’s instructions  
- product label requirements  
- *Occupational Health and Safety Regulation 2001* (NSW)  
- Material Safety Data Sheets (MSDS)  
- Standard Operating Procedures (SOP)  

Learning experiences for the HSC must address:  
Influences on watering requirements including:  
- temperature and humidity
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|         | Water may be applied manually or by operating the irrigation system. | - plant cultural requirements  
- moisture content of plant media  
- needs at various stages of growth  
- plant leaf area and root development. |Methods of watering including:  
- manual  
  - watering can  
  - hand-held hose  
- irrigation systems  
  - capillary mats  
  - sprinklers  
  - overhead sprinklers  
  - drip irrigation  
  - computerised watering system. |
|         | What enterprise work procedures may apply to this standard? | Enterprise work procedures including:  
- watering schedule  
- efficient use of water. |An awareness of the Nursery Industry Water Management Best Practice Guidelines. |
|         | Work procedures will be based on sound horticultural principles and practices and may include supervisors oral or written instructions, the Nursery Industry Accreditation Scheme, plant care 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 operators manuals; waste disposal, recycling and re-use guidelines; and OHS procedures. | Learning experiences for the HSC must address:  
Safe work procedures associated with tending nursery plants including:  
- safe use of chemicals and hazardous substances  
  - PPE  
  - operator hygiene  
  - storage and handling of dangerous goods  
- using sharp tools  
  - tool maintenance  
  - SOP  
- appropriate manual handling  
  - lifting devices and manual handling equipment  
- protection from solar radiation  
- safe work practice and procedures for machinery operation  
  - SOP  
  - protective guards and covers  
  - earth leakage switches  
  - PPE  
  - operated in well ventilated areas. |
| 2.6     | Nursery operations are undertaken according to OHS requirements. |What personal protective equipment (PPE) may be required to tend nursery plants?  
Personal protective equipment may include hat, boots, overalls, gloves, sunscreen lotion, goggles, face mask, respirator, spray jacket or suit. | |
|         | What OHS requirements may be relevant to this standard? |What OHS requirements may include identifying hazards, assessing and reporting risks, cleaning, maintaining and storing tools and equipment, appropriate use of personal protective equipment including sun protection, safe operation of tools and equipment, safe handling, use and storage of chemicals and hazardous substances, correct manual handling, basic first aid, personal hygiene and reporting problems to supervisors. | |

Primary Industries Curriculum Framework  
October 2003  
RTF2024A  Tend nursery plants
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<td>3</td>
<td>Complete nursery plant maintenance operations</td>
<td><strong>3.1</strong> Workplace information is recorded in the appropriate format. What workplace information is likely to be recorded? Records may include environmental parameters, date of treatments, type of treatment and rate of treatment.</td>
<td><strong>Learning experiences for the HSC must address:</strong> Type of waste collected including: • surplus media and treatments • unused pots and containers • plant debris • drainage water • packaging material • tags and signs. Disposal and recycling of waste to minimise environmental impact considering: • NSW Department of Environment and Conservation (incorporating Environment Protection Authority (EPA)) guidelines and regulations • local council guidelines and regulations • best practice methods for recycling and reuse.</td>
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<td><strong>3.2</strong> Waste is collected and disposed of or recycled to minimise damage to the external environment. What type of waste may be collected? Waste may include left over treatments, unused containers, plant debris or faulty irrigation components. What are the implications for the external environment when performing this unit? Environmental implications may include the contamination of off-site ground water or soils from solids, nursery debris, nutrients or chemicals.</td>
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<td><strong>3.3</strong> Tools and equipment are cleaned and stored according to enterprise work procedures. What tools and equipment are likely to be used for plant maintenance? Tools and equipment may include secateurs, water spray containers, dibblers, sprayers, plant supports, ties and rubbish bins. What enterprise work procedures may apply to this standard? Work procedures will be based on sound horticultural principles and practices and may include supervisors oral or written instructions, the Nursery Industry Accreditation Scheme, plant care 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 operators manuals; waste disposal, recycling and re-use guidelines; and OHS procedures.</td>
<td><strong>Learning experiences for the HSC must address:</strong> Maintenance and storage of tools and equipment including: • returning tools to specific storage location • routine maintenance, cleaning and sterilisation • replacement and repair of damaged equipment.</td>
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</table>
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  3 = perform, administer and design the process

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<tr>
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<tr>
<td>1</td>
<td>How can communication of ideas and information (1) be applied?</td>
<td>Ideas and information relating to plant maintenance activities and problems encountered should be discussed with other members of the work team and the supervisor.</td>
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<td>2</td>
<td>How can information be collected, analysed and organised (1)?</td>
<td>Enterprise work procedures, such as a daily watering plan, should be consulted, interpreted and applied to co-ordinate plant maintenance activities with further clarification sought from the supervisor where necessary.</td>
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<tr>
<td>3</td>
<td>How are activities planned and organised (1)?</td>
<td>Materials, tools, equipment and work activities for daily plant maintenance routines may need to be arranged before work periods, and there may be some responsibility for co-ordinating work activities with other members of the work team.</td>
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<td>4</td>
<td>How can team work (1) be applied?</td>
<td>Nursery plant maintenance activities may involve working with other members of a team to complete operations within the daily work routine.</td>
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<td>5</td>
<td>How can the use of mathematical ideas and techniques (1) be applied?</td>
<td>Calibrating spray equipment and determining quantities and application rates for treatment of nursery plants will require mathematical application.</td>
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<td>6</td>
<td>How can problem-solving skills (1) be applied?</td>
<td>Problems relating to maintenance of the nursery environment, the nursery plants, treatments, watering, tools and equipment, workplace safety and other team members may arise during the maintenance of nursery plants.</td>
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<td>7</td>
<td>How can the use of technology (1) be applied?</td>
<td>Technology may be applied in the preparation, use and maintenance of horticultural equipment and machinery.</td>
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