



**Australian Government**

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

# **RTF3023A Monitor turf health**

**Release: 1**

## **RTF3023A Monitor turf health**

### **Modification History**

Not applicable.

### **Unit Descriptor**

This competency standard covers the process of monitoring the health and condition of a range of multi-use and high performance sports turf playing surfaces.

The monitoring of turf health is likely to be under limited supervision from others, with checking only related to overall progress. The work involves the application of extensive horticultural knowledge and a broad range of horticultural skills.

Monitoring is normally done within routines, methods and procedures where some discretion and judgement is required in the selection of equipment and materials, organisation of work, services, actions, and the achievement of outcomes within time and budgetary 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 monitoring activities	<p>1.1 The turf site to be monitored, nature and regularity of monitoring, and time constraints for delivering reports are identified according to <b>enterprise work procedures</b>.</p> <p>1.2 Plant tissue and soil analysis consultants are identified and their sampling specifications determined in consultation with the supervisor and/or consultants.</p> <p>1.3 Monitoring <b>tools and equipment</b> are selected according to enterprise work procedures.</p> <p>1.4 Pre-operational and safety checks are carried out on tools and equipment according to manufacturers specifications and enterprise work procedures.</p> <p>1.5 <b>OHS hazards</b> are identified, risks assessed, controls implemented and reported to the supervisor.</p> <p>1.6 Suitable <b>personal protective equipment (PPE)</b> is selected, used and maintained.</p>
2 Collect soil and plant tissue samples	<p>2.1 Samples for off-site testing are collected from a representative area and prepared, packaged, accurately labelled and dispatched according to consultants requirements and enterprise work procedures.</p> <p>2.2 On-site <b>soil tests</b> are performed according to testing instrument instructions, industry codes of practice and enterprise work procedures.</p> <p>2.3 Divots are replaced from soil sampling sites and <b>waste materials</b> disposed of according to enterprise work procedures.</p> <p>2.4 Sampling tools and equipment are cleaned of all <b>residue</b> and returned to storage according to manufacturers' specifications and enterprise work procedures.</p>

- 2.5 Results of analysis are recorded and compared with acceptable parameters according to **researched and experiential awareness**.
  - 2.6 Recommendations are determined for **remedial action** to address analytically identified deficiencies, and to meet target chemical balances according to researched and experiential awareness, and enterprise work procedures.
- 3 Visually monitor turf health
- 3.1 Monitoring of turf health is undertaken according to **OHS requirements**.
  - 3.2 **Health indicators** of the turf are assessed visually with reference to researched and experiential awareness, **site conditions, seasonal conditions**, and according to enterprise work procedures.
  - 3.3 Deficiencies in **turf quality** are identified visually with reference to researched and experiential awareness, site conditions, seasonal conditions, and according to enterprise work procedures.
  - 3.4 Reports and recommendations are made to the supervisor according to enterprise work procedures.

## Required Skills and Knowledge

Not applicable.

## Evidence Guide

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

Competence in monitoring turf health requires evidence that a person is able to organise and co-ordinate selection of equipment, sample collection, visual observation and analysis services to achieve monitoring outcomes within time constraints.

The skills and knowledge required to monitor turf health must be **transferable** to a different work environment. For example, the use and care of monitoring tools and equipment, interpretation and application of monitoring observations, and analytical results may be required in implementing a turf health program. The identification of plant pest and disease symptoms and their relation to levels of turf health may also be useful in determining the threshold at which to apply control measures when implementing an Integrated Pest Management program.

### 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:

practical understanding of soil and plant tissue analysis as a monitoring and turf management tool, the main elements of analysis, and their significance as indicators of nutritional deficiency and toxicity

awareness of the role of trace elements and nutrients required by turf grass plants, and symptoms of toxicities and deficiencies

turf grass diseases, including commonly occurring regional diseases, seasonality, history of site and visual disease symptoms

main, simple and compound fertiliser products available to the enterprise including analysis, solubility, salt index, rates and cost

rates and regularity of recommended fertiliser and pesticide application to achieve optimum plant health objectives, while minimising external environment impact through leaching, excessive spraying and overuse.

**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:

- communicate with work team members, supervisors and consultants
- utilise proforma reporting, analysis and work procedure documents
- measure materials and interpret specifications and analytical results
- co-ordinate work groups, consultants and own activities to sequentially and effectively complete monitoring in a timely and cost effective manner.

## 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? Written, oral and telecommunication of ideas and information relating to monitoring activities and problems encountered will be required with the work group, supervisor and consultants.
2. How can **information be collected, analysed and organised (1)**? Enterprise work procedures and turf health literature should be consulted, interpreted and applied to co-ordinate monitoring activities, with further clarification sought from the supervisor when necessary.
3. How are **activities planned and organised (1)**? Work activities for the work group, consultants and self will be planned prior to and adjusted during the monitoring program.
4. How can **team work (1)** be applied? Maintenance and repair works to improve turfed surfaces rely on the application of monitoring results and recommendations.
5. How can the use of **mathematical ideas and techniques (1)** be applied? Mathematical application will be required when quantitatively interpreting analytical results and observations, assessing the level of damage to the turf, and calculating the amount of remedial chemical or manual intervention that may be required
6. How can **problem-solving skills (1)** be applied? Problems in turf health and quality of appearance will require techniques such as ongoing setting of targets for improvement, and recommendations for action to meet those targets.
7. How can the **use of technology (1)** be applied? Technological understanding will be required to use monitoring tools and equipment, interpret test results, assess turf health, report, recommend remedial action, 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 contexts within which the performance and knowledge requirements of this standard may be assessed. The scope of variables chosen in training and assessment requirements may depend on the work situations available

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, monitoring program, enterprise standard operating procedures (SOP), specifications, routine maintenance schedules, work notes; product labels and Material Safety Data Sheets (MSDS); manufacturers service specifications and operators manuals; waste disposal, recycling and re-use guidelines; and OHS procedures.

What **tools and equipment** may be required to monitor turf health?

Soil coring tools, probes and field testing equipment such as pH kits and EC meters may be required.

What **OHS hazards** may be associated with monitoring turf health?

Hazards may include solar radiation, soil-borne micro-organisms, chemicals and hazardous substances, manual handling, sharp hand tools and equipment, and uneven surfaces.

What **personal protective equipment (PPE)** may be required to construct soil profiles?

Personal protective equipment may include hat, boots, overalls, gloves, goggles, face mask, and sunscreen lotion.

What **soil tests** may be undertaken?

These may include tests for pH, salinity, texture and soil type. Samples may include plugs and core samples. Test kits may include a dry test, CSIRO kits, EC meters and pH kits.

What **waste materials** may result from sampling procedures?

Waste materials may include soil or plant-based materials, and packaging materials of plastic and paper.

What **residues** may affect sampling and analytical accuracy?

Plant and soil-based residues, and any detergents or other cleaning chemicals may pollute the soil and plant tissue samples taken for analysis.

What **researched and experiential**

Knowledge of the species and variety planted

<b>awareness</b> may be relevant to this standard?	may be increased through consultation with team members, the supervisor, own knowledge, specific literature, supplier specifications, local historical performance data, and industry best practice guidelines.
What <b>remedial action</b> may be included in recommendations?	Remedial action may include chemical, organic or manual action to repair assessed deficiencies in turf nutrition, health or quality. Methods to minimise the environmental impact of the intervention procedure should also be included.
What <b>OHS requirements</b> may be relevant to this standard?	OHS requirements may include identifying hazards; assessing risks and implementing controls; 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.
What <b>health indicators</b> of the turf may be evident from observation?	Health properties may include turf strength, wear tolerance, growth rate, plant density, colour and recovery rate.
What <b>site conditions</b> may affect turf health?	Site conditions may include soil types, moisture content, pH levels, salinity, texture, compaction, aspect, pollutants, toxicity, climate, buildings, roadworks, shade and competing plants such as trees and tree roots.
What <b>seasonal conditions</b> may affect turf health?	Seasonal conditions may include day length, warmth, dormancy, frost and rainfall.
What factors may indicate level of <b>turf quality</b> ?	Factors may include upright growth, apparent stress, and uniformity or variation in the growing pattern.

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

## **Unit Sector(s)**

Not applicable.