

## National Unit Specification: general information

<b>UNIT</b>	Garden Centre Operations: Plant Protection, Nutrition and Care (Intermediate 2)
<b>NUMBER</b>	D3BD 11
<b>COURSE</b>	Certificate in Garden Centre Operations

### SUMMARY

Explaining the concepts of plant protection and describing plant nutrition, simple soil types and growing media.

### OUTCOMES

- 1 Explain the main processes of plant nutrition.
- 2 Identify ingredients and properties of modern growing media and mulches.
- 3 Describe methods of control of common plant pests, diseases and weeds.
- 4 Outline the procedures for safe handling and storage of chemicals used in a garden centre environment.

### RECOMMENDED ENTRY

There are no formal entry requirements for this unit.

### CREDIT VALUE

1.5 Credit.

### CORE SKILLS

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### Administrative Information

**Superclass:** SE

**Publication date:** June 2000

**Source:** Scottish Qualifications Authority 2000

**Version:** 01

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Information on the automatic certification of any core skills in this unit is published in *Automatic Certification of Core Skills in National Qualifications* (SQA, 1999).

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# National Unit Specification: statement of standards

## UNIT                      Garden Centre Operations: Plant Protection, Nutrition and Care                      (Intermediate 2)

Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to the Scottish Qualifications Authority.

### OUTCOME 1

Explain the main processes of plant nutrition.

#### Performance criteria

- a) The identification of the main plant nutrients is correct.
- b) The explanation of the role of plant nutrients is correct.
- c) The explanation of the manner in which nutrients are taken into plants is accurate.
- d) The description of sources of plant nutrients is appropriate to garden centre retailing.

#### Note on range for the outcome

Plant nutrients: nitrogen; phosphorus; potassium; micronutrients.

Sources of plant nutrients: top dressing; base dressing; liquid feed.

#### Evidence requirements

Please refer to *Evidence requirements for the unit* at the end of the Statement of Standards.

### OUTCOME 2

Identify ingredients and properties of modern growing media and mulches.

#### Performance criteria

- a) The identification of the ingredients of growing media and their properties is correct.
- b) The selection of appropriate growing media for specific situations is correct.
- c) The description of uses of manure and mulches is correct.
- d) The explanation of recycling garden wastes to produce compost is correct.

#### Note on range for the outcome

Ingredients: peat; sand; loam; farmyard manure; composted bark; gravel; garden wastes.

#### Evidence requirements

Please refer to *Evidence requirements for the unit* at the end of the Statement of Standards.

## National Unit Specification: statement of standards (cont)

**UNIT** Garden Centre Operations: Plant Protection, Nutrition and Care  
(Intermediate 2)

### OUTCOME 3

Describe methods of control of common plant pests, diseases and weeds.

#### Performance criteria

- a) The identification of common plant pests, diseases and weeds is correct.
- b) The description of the effects of common pests, diseases and weeds on plants is correct.
- c) The description of control methods is correct.
- d) The selection of control methods for specific plant problems is appropriate.

#### Note on range for the outcome

Common plant pests, diseases and weeds: aphids; whitefly; vine weevil; botrytis; mildew; annual weeds; perennial weeds.

Control methods: cultural; chemical; biological.

#### Evidence requirements

Please refer to *Evidence requirements for the unit* at the end of the Statement of Standards.

### OUTCOME 4

Outline the procedures for safe handling and storage of chemicals used in a garden centre environment.

#### Performance criteria

- a) The identification of chemicals that require safe handling and storage is correct
- b) The description of safe handling is appropriate for the chemicals and consistent with health and safety regulations and procedures.
- c) The description of safe storage is appropriate for the chemicals and consistent with health and safety regulations and procedures.
- d) The description of legislation governing the application, safe handling, storage and sale of chemicals is correct and relevant to the Garden Centre environment.

#### Evidence requirements

Please refer to *Evidence requirements for the unit* at the end of the Statement of Standards.

## **National Unit Specification: statement of standards (cont)**

**UNIT**            Garden Centre Operations: Plant Protection, Nutrition and Care  
(Intermediate 2)

### **EVIDENCE REQUIREMENTS FOR THE UNIT**

#### **Outcome 1**

Written and/or oral evidence to show that the candidate understands the processes of plant nutrition.

#### **Outcome 2**

Written and/or oral evidence of the candidate's knowledge and understanding of the properties of modern growing media and mulches.

#### **Outcome 3**

Written and/or oral evidence to show that the candidate can describe the control of plant pests, diseases and weeds, and can select control methods for 3 specific plant problems.

#### **Outcome 4**

Written and/or oral evidence of the candidate's knowledge and understanding of the legislation and procedures for handling and storing and applying chemicals.

# National Unit Specification: support notes

**UNIT**            Garden Centre Operations: Plant Protection, Nutrition and Care  
(Intermediate 2)

This part of the unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this unit is at the discretion of the centre, the notional design length is 60 hours.

## **GUIDANCE ON THE CONTENT AND CONTEXT FOR THIS UNIT**

### **Outcome 1**

Candidates should have a clear understanding of plant nutrition.

They should be aware of the range of macronutrients and micronutrients required by plants and understand how these nutrients enter plants from the growing media. They should also understand their role in the growth and development of plants.

The types and range of fertilisers available in Garden Centres should be covered.

### **Outcome 2**

Candidates should develop a clear understanding of the ingredients of modern growing media and mulches and their individual properties. These could include peat, sand, loam, perlite, vermiculite, composted bark, coco fibre, grit, gravel.

They should be aware of the range of growing media and the properties of each. These should include loamless and loam based composts.

They should understand the purpose of mulches and the properties of a range of types. These could include peat, composted bark, wood chippings, gravel, grit, hydroleca granules, inorganic types.

### **Outcome 3**

Candidates must be aware of common plant pests and gain a clear understanding of how to control them.

Common pests could include insects (aphids, whitefly, vine weevil), mammals (deer, rabbits), birds, molluscs (slugs and snails), nematodes, mites, vandals. Common diseases could include fungal (damping off, botrytis, rusts, leaf spots), bacterial (cankers, fire blight), viral. Common weeds could include annual (Hairy Bittercress, Groundsel, Annual meadow grass) and perennial (Willow Herb, Dandelion, Dock, Creeping Buttercup).

Control methods could include cultural (proper growing conditions and water, light levels and fertiliser applications), chemical (contact, systemic, stomach ingestant and fumigant) and biological (parasites and predators).

The candidate should be given plant problems and asked to identify appropriate control methods.

### **Outcome 4**

The candidate must develop a clear understanding of the procedures for safe handling and storage of chemicals. This will include safe handling and storage used by the garden staff; storage of chemicals in the warehouse; storage of chemicals in the retail area of a Garden Centre.

They should understand the responsibilities of the employer and employee towards each other with regards to Health and Safety and towards members of the public.

There should be a clear understanding of the current legislation and codes of practice relating to the safe handling and storage of chemicals.

## National Unit Specification: support notes (cont)

**UNIT** Garden Centre Operations: Plant Protection, Nutrition and Care  
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Candidates should be given the opportunity to demonstrate the application of chemical and other pest control methods within the garden centre environment for the purpose of developing the ability to use these safely and correctly.

### **GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT**

#### **Outcome 1**

Use of samples of nutrients and fertilisers. Slides or videos used to show the common symptoms of nutrient deficiencies. Use Garden Centre publicity materials to see the range of fertilisers commonly on sale.

#### **Outcome 2**

Provide samples of compost ingredients and branded composts. Look at samples of manure and mulching materials. Examine compost heaps at different stages of decomposition.

#### **Outcome 3**

Candidates should have the opportunity to gain experience of the effects of a range of common plant pests and methods of controlling these. Candidates need to be aware of the potential dangers when using chemically-based methods of pest control and any health and safety regulations regarding their use. (This also applies to outcome 4).

#### **Outcome 4**

Visit other Garden Centres to identify the range of products used on-site and for sale to the public. Examine the way the chemicals are stored. Discuss the relevant legislation. Demonstrations on the correct usage of pest control could be given and candidates allowed the opportunity to gain practical experience of application in a controlled environment/situation.

### **GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT**

Integrative assessment instruments should be employed, such as structured reports/assignments/projects, which have been designed to provide structured evidence of the achievement of specified outcomes/performance criteria. Specific items of factual knowledge could be assessed separately if necessary by means of short restricted response questions.

### **SPECIAL NEEDS**

This unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering special alternative outcomes for units. For information on these, please refer to the SQA document *Guidance on Special Assessment and Certification Arrangements for Candidates with Special Needs/Candidates whose First Language is not English* (SQA, 1998).