



## National Unit specification: general information

**Unit title:** Vegetative Propagation

**Unit code:** H1K6 11

**Superclass:** SE

**Publication date:** May 2012

**Source:** Scottish Qualifications Authority

**Version:** 01

### Summary

The Unit is designed to meet the needs of candidates following a range of programmes and is particularly suitable for horticultural and other land-based provision. On completion of the Unit candidates will be able to describe a range of methods for propagating plants vegetatively and will be able to undertake propagation procedures, maintain equipment and propagules and produce new plants from the propagated material.

### Outcomes

- 1 Describe vegetative propagation.
- 2 Propagate given plants using accepted vegetative propagation techniques.
- 3 Investigate appropriate vegetative propagation techniques for specified plants.

### Recommended entry

Entry is at the discretion of the centre.

### Credit points and level

1 National Unit credit at SCQF level 5: (6 SCQF credit points at SCQF level 5\*)

*\*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

## **General information (cont)**

**Unit title:** Vegetative Propagation

### **Core Skills**

Opportunities to develop aspects of Core Skills are highlighted in the support notes of this Unit specification.

There is no automatic certification of Core Skills or Core Skill component in this Unit.

## **National Unit specification: statement of standards**

### **Unit title:** Vegetative Propagation

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 SQA.

#### **Outcome 1**

Describe vegetative propagation.

##### **Performance Criteria**

- (a) The operation and maintenance of indoor equipment to maintain cuttings is described accurately.
- (b) The principles and practices of root, stem and leaf cuttings are described accurately.
- (c) The principles and practices of propagation by division are described accurately.
- (d) The principles and practices of layering are described accurately.
- (e) The principles of micropropagation are described accurately.
- (f) The principles and practices of potting up and weaning rooted cuttings are described accurately.

#### **Outcome 2**

Propagate given plants using accepted vegetative propagation techniques.

##### **Performance Criteria**

- (a) Information is obtained by active participation in practical exercises.
- (b) Given plants are propagated correctly.
- (c) Given rooted cuttings are potted and weaned correctly.
- (d) Given herbaceous plants are propagated correctly by division.
- (e) Given plants are propagated correctly by layering.
- (f) Relevant procedures and observations are recorded and presented in an appropriate format.
- (g) The work methods of and practices demonstrated by the candidate are safe and in accordance with the requirements of all relevant Health and Safety regulations.

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

**Unit title:** Vegetative Propagation

### **Outcome 3**

Investigate appropriate vegetative propagation techniques for specified plants.

#### **Performance Criteria**

- (a) The selection of plants for the particular methods of vegetative propagation is appropriate.
- (b) Relevant information is selected and processed accurately.
- (c) Information is presented in an appropriate format.
- (d) Conclusions drawn are valid and explanations given are supported by evidence.

#### **Evidence Requirements for this Unit**

For Outcome 1 candidates are required to produce written and/or recorded oral evidence to demonstrate their knowledge and understanding of vegetative propagation.

For Outcome 2 candidates are required to produce practical evidence for Performance Criteria (b)–(e), supported by a record of their work. Evidence of propagation by softwood cuttings, semi-ripewood cuttings, hardwood cuttings and root cuttings should be produced.

For Outcome 3 candidates are required to produce a report of one vegetative propagation investigation, describing in detail the vegetative propagation of five plants, each by a different method. The plants used in Outcome 3 must be different from those in Outcome 2.

## **National Unit specification: support notes**

### **Unit title:** Vegetative Propagation

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 40 hours.

### **Guidance on the content and context for this Unit**

#### **Outcome 1**

The functions and maintenance of the component parts of closed case and mist propagation Units should be introduced at an early stage. This should cover soil warming cable, thermostat, artificial leaf, atomiser and filters. Routine maintenance considerations will lead on to regular monitoring for disease, shading, turning and watering as required in Units where these facilities are not provided automatically.

Maintenance of stock plants regularly used as a source of material for vegetative propagation should be covered together with considerations such as seasonality and optimum times of day for removing material from the parent plants. The physiological aspects of propagation, including the significance of hormone rooting powders should be covered in outline.

Stem cuttings should include softwood, semi-ripe and hardwood types; leaf cuttings should include petiole and leaf blade types. Leaf bud cuttings should also be considered. The time required for rooting and therefore for potting up and weaning should be explained for the different types. Propagation by division should consider both fibrous rooted plants and plants with fleshy crowns. Discussion of layering could be restricted to simple layering but specialised techniques such as air layering could be included. The advantages and disadvantages of micropropagation should be considered in outline only. A visit to a micropropagation Unit would be useful.

Grafting techniques are beyond the scope of this Unit.

#### **Outcome 2**

Much of the learning and teaching for Outcome 1 could be combined with the delivery of Outcome 2. Economic use of plant material, size, spacing of cuttings in trays, selection of suitable environment for rooting and other practical aspects would be better covered during practical work than in the classroom situation. Seasonality aspects will be important considerations here and an extended delivery timescale would be appropriate. Accurate records of all activities and observations should be an integral part of the work of this Outcome and candidates should be encouraged always to have a notebook at hand.

#### **Outcome 3**

This Outcome is best undertaken as a research-based project with the teacher/lecturer providing support and advice as appropriate. It is intended to encourage candidates to be able to deal confidently with the propagation of unfamiliar species.

## **National Unit specification: support notes (cont)**

**Unit title:** Vegetative Propagation

### **Guidance on learning and teaching approaches for this Unit**

Although some formal teaching sessions may be required to introduce the principles and practices of vegetative propagation, most of this Unit should involve a strongly candidate centred approach with the teaching and learning taking place in the work area. Video material may be appropriate for demonstration purposes. Candidates should spend most of the delivery time preparing material for vegetative propagation, establishing and maintaining propagules and establishing new plants produced by the various vegetative propagation processes.

### **Opportunities for developing Core Skills**

There is no automatic certification of Core Skills or Core Skills components in this Unit, however there may be opportunities to develop the Core Skills of *Communication*, *Problem Solving* and *Working with Others* at SCQF Level 4.

### **Guidance on approaches to assessment for this Unit**

Centres may use the instruments of assessment which are considered by teachers/lecturers to be the most appropriate. Integrated assessments in the form of end-of-Unit tests could be used where appropriate with questions covering all Performance Criteria.

Outcome 2 could be assessed by participation in practical exercises and an appropriate level of attainment in the associated records.

Outcome 3 could be assessed by participation in a library or internet based investigation and an appropriate level of attainment in the associated report.

### **Opportunities for the use of e-assessment**

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

### **Disabled candidates and/or those with additional support needs**

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website [www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements)

## History of changes to Unit

Version	Description of change	Date

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