



Higher National Unit specification

General information for centres

Unit title: Hardy Ornamental Nursery Stock: Container Production

Unit code: F2AY 35

Unit purpose: This Unit aims to introduce the candidate to container production in the hardy ornamental nursery stock industry (HONS). Candidates will gain an understanding of the different markets for HONS, how they have developed and the influences that affect demand for these plants. Candidates will gain an understanding of what is involved in producing a range of species and how to plan their production.

On completion of the Unit the candidate should be able to:

- 1 Evaluate the demand for Hardy Ornamental Nursery Stock.
- 2 Prepare a propagation schedule for a range of hardy ornamental nursery stock.
- 3 Prepare a production plan for growing on hardy ornamental nursery stock.

Credit points and level: 1 HN credit at SCQF level 8: (8 SCQF credit points at SCQF level 8*)

**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.*

Recommended prior knowledge and skills: Prior knowledge or skills are not essential for this Unit. However, it would be beneficial for candidates to have had practical experience in plant propagation and potting, pruning and growing on of plants. This could be through work experience or the completion of Units like F1JA 34 *Horticulture Practices*.

Core Skills: There are opportunities to develop the Core Skill of *Problem Solving* at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Assessment: The assessment of this Unit can reflect the teaching approach taken by a particular centre. Outcomes 1, 2 and 3 could be assessed together, for example in a written report. This could be based upon a case study based on a particular group of species of HONS. The group of species for each candidate should be different. Alternatively a sequential approach to assessment could be taken, assessing the Outcomes in the order written.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Evaluate the demand for hardy ornamental nursery stock (HONS)

Knowledge and/or Skills

- ◆ Major markets for HONS
- ◆ Factors that influence demand
- ◆ Quality standards and specifications
- ◆ Role of Plant Passports

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ evaluate the markets for a given group of HONS

Assessment Guidelines

This Outcome could be assessed as part of a staged submission meeting the requirements of all three Outcomes. The report should require candidates to evaluate the demand for a given group of HONS; their importance in Amenity and Retail markets should be identified, how this is changing with time and the possible factors that have affected the demand. Quality standards and specifications, including the need for Plant Passports should be given with the reasons for differences depending on markets evaluated.

Outcome 2

Prepare a propagation schedule for a range of hardy ornamental nursery stock (HONS)

Knowledge and/or Skills

- ◆ Main methods of propagation used for HONS
- ◆ Scheduling of the propagation of a range of plants
- ◆ Provision of quality propagules

Higher National Unit specification: statement of standards (cont)

Unit title: Hardy Ornamental Nursery Stock: Container Production

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ select appropriate methods of propagation and correctly schedule the propagation of a given group of HONS

Assessment Guidelines

This Outcome could be assessed as part of a staged submission meeting the requirements of all three Outcomes based on a case study for a specific group of HONS. This Outcome will be required to be submitted along with Outcome 3 as scheduling is affected by the subsequent production plan.

The report should require candidates to correctly select a propagation method(s) suitable for a given group of HONS, a schedule for the propagation of the plants to fit in with its subsequent growing on. The candidate should identify the major ways that the correct quality of propagule is achieved.

Outcome 3

Prepare a production plan for growing on hardy ornamental nursery stock (HONS)

Knowledge and/or Skills

- ◆ Substrates used for HONS production
- ◆ Irrigation of the crop
- ◆ Use of protective structures
- ◆ Major Pest problems
- ◆ Formative pruning

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ prepare a production plan for growing on a group of HONS

Assessment Guidelines

This Outcome could be assessed as part of a staged submission meeting the requirements of all three Outcomes. This Outcome will be required to be submitted along with Outcome 2 as scheduling is affected by the subsequent production plan.

The report should identify a suitable production plan for the group of plants for one market identified in Outcome 1. The length of the report is less important than whether the plan contains enough information that could be practically applied to a cropping situation. In addition a brief explanation for the selection of the elements of the plan should be given.

Administrative Information

Unit code: F2AY 35

Unit title: Hardy Ornamental Nursery Stock: Container Production

Superclass category: SD

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History of changes:

Version	Description of change	Date
02	Changes made to Outcomes on page 1.	20/11/08

Source: SQA

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Higher National Unit specification: support notes

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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

This Unit aims to develop candidate skills in the planning of the production of Container Grown Hardy Ornamental Nursery Stock. As well as the technical aspects of planning the propagation and growing on of plants, candidates will be introduced to the markets, the influences that affect demand for HONS and specific plants and the quality standards that are required by the different markets. This will emphasise the importance of 'Market Led' production so that plants are grown to meet a customer demand. Candidates should learn about the similar production of groups of plants rather than individual species, for example; herbaceous perennials, alpines, heaths and heathers, trees, conifers, deciduous shrubs, slow growing evergreen shrubs, fast growing evergreen shrubs, ericaceous shrubs.

An Integrated Crop Management approach to production should be encouraged in particular; crop protection, waste and pollution management, energy management, wildlife and landscape management, monitoring.

Outcome 1 introduces candidates to the main markets for HONS; Amenity, Retail, inter-nursery trade and the plant quality and specification required by different markets. The requirements for plant passports should be identified as part of the quality standards. The influences on demand should also be introduced to the candidates, for example: social structure and wealth, government policies, overseas competition, climate, fashion.

In Outcome 2 candidates will identify the major methods of propagation employed in commercial container production of HONS; seed, cuttings, grafting, division, and their use in propagating different groups of HONS. The provision of quality propagation material, for example through managed stock beds should be discussed. Candidates should learn how to select specific propagation methods in relation to species, subsequent production plan, cost and labour requirement. The care of the propagules through good husbandry, hygiene and crop protection should be identified.

In Outcome 3 candidates will plan the growing on to point of sale of a group on HONS. Substrate selection will cover the selection of appropriate growing media taking into account the requirements for quality growth as well as the environmental impact of the materials used. Approaches to optimum crop nutrition will be covered and candidates will be able to select the type of fertiliser and application rate depending on factors like; crop, production time, irrigation method, use of protection.

Irrigation will investigate sources of water, including consideration of environmental impact, reliability of quality and supply, volumes required depending on crop and irrigation method, methods of applying irrigation, recycling of water, use of irrigation to manage crop growth. Candidates will investigate the use of protective structures for crop growth and over-wintering. The provision of a suitable environment for growth should be discussed along with the requirement for the hardening of plants prior to sale. The maintenance of plant quality over-winter will be covered along with the principles of over-wintering plants with or without protection.

Higher National Unit specification: support notes (cont)

Unit title: Hardy Ornamental Nursery Stock: Container Production

Pest problems; pest, disease and weeds will look at the major problems in HONS. An integrated approach to pest control will be introduced to candidates that will form part of the overall production plan. The importance of good plant husbandry will be taught along with the role of pesticides, biological control and novel techniques like active composts.

Approaches to formative pruning to achieve the plant specification required will be discussed.

Guidance on the delivery and assessment of this Unit

It is recommended that this Unit be taught through a series of lectures, which could be supplemented by practical classes. Practical classes could include visits to nurseries illustrating some of the principles being taught. Alternatively, these could be in the form of talks by growers or buyers.

Suitable approaches to generating evidence may include supplementing a candidate-centred written assignment with an oral explanation by the candidate.

For the teaching of the Outcome 1 the following references are recommended:

Horticultural Trades Association National Plant Specification (August 2002), Helios Plant Selector. Software will provide this information in electronic form. Including:

HTA Contractor Certification Scheme — CCS

HTA Nursery Certification Scheme — NCS

<http://www.defra.gov.uk/planth/publicat/passport/pass.pdf>

<http://statistics.defra.gov.uk/esg/>

For the teaching of Outcome 2 the following references are recommended:

'Practical Woody Plant Propagation for Nursery Growers', Bruce Macdonald

'Grower Manual 1: Nursery Stock Manual', Keith Lamb, James Kelly, Peter Bowvrick.

The International Plant Propagators Society Combined Proceedings

For the teaching of Outcome 3 the following references are recommended:

The International Plant Propagators Society Combined Proceedings

'The Modern Nurseryman', John Stanley and Alan Toogood

ADAS Leaflet P3058 (1986): *'Irrigation of container-grown nursery stock'*

ADAS Leaflet 902 (1985): *'Construction of Efford sandbeds'*

ADAS Leaflet P3129 (1987): *'Winter damage of container-grown nursery stock'*

Horticultural Development Council (2003) Fact Sheet 02/03, *'Vine weevil control in Hardy Nursery Stock'*

Opportunities for developing Core Skills

There are opportunities to develop the Core Skill of *Problem Solving* at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Higher National Unit specification: support notes (cont)

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Open learning

Elements of this Unit could be delivered by distance or flexible learning. Although it would be beneficial for the candidate to attend the centre for supervised assessment, this could be done in off-centre locations with appropriate arrangement.

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).

General information for candidates

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