



National Unit specification: general information

Unit title: Horticultural Composting (SCQF level 4)

Unit code: H1X6 10

Superclass: SE

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Summary

This Unit is designed to enable candidates to develop introductory skills and knowledge in the production of compost.

Candidates will be introduced to the basics of composting; this includes the siting and construction of compost bins, the selection of suitable waste to add, its' mixing and ultimately the use of the compost produced. The candidate will also learn why composting is such an environmentally beneficial activity to undertake.

This Unit is aimed at candidates with little or no experience of composting. This is an optional Unit in the National Certificate in Introduction to Horticulture at SCQF level 4. It is also suitable for use as a freestanding Unit.

Outcomes

- 1 Assist in the planning of a composting system.
- 2 Assist in maintaining a compost system.
- 3 Assist in the safe use of compost in a horticultural activity.

Recommended entry

Entry is at the discretion of the centre.

It is expected the candidate will have little or no knowledge of horticulture before starting this Unit.

General information (cont)

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Credit points and level

1 National Unit credit at SCQF level 4: (6 SCQF credit points at SCQF level 4*)

**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.*

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 components in this Unit.

National Unit specification: statement of standards

Unit title: Horticultural Composting (SCQF level 4)

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. Centres need ensure they have a suitable composting system in place to give candidates the opportunity to work in a realistic situation.

Outcome 1

Assist in the planning of a composting system.

Performance Criteria

- (a) Identify a suitable site.
- (b) Identify suitable materials and construction methods.
- (c) Identify a suitable composting system.

Outcome 2

Assist in maintaining a compost system.

Performance Criteria

- (a) Assist with selecting tools, equipment and materials for maintaining a compost heap.
- (b) Assist in sorting waste into compostable and non-compostable material.
- (c) Assist with adding waste material to a compost heap.
- (d) Carry out tasks, under supervision, in accordance with safe working practices.
- (e) Tidy the area, clean and store tools, equipment and materials.

Outcome 3

Assist in the safe use of compost in a horticultural activity.

Performance Criteria

- (a) Assist with selecting tools and equipment.
- (b) Carry out tasks, under supervision, in accordance with safe working practices.
- (c) Tidy the area, clean and store tools, equipment and materials.

National Unit specification: statement of standards (cont)

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Evidence Requirements for this Unit

Performance and written and/or oral evidence is required to show that candidates have achieved all Outcomes and Performance Criteria at a standard appropriate for basic entry level skills. In particular, attention should be paid to enabling candidates to distinguish between material that is appropriate for composting and material that is not.

All practical activities must be carried out in accordance with current health and safety regulations, which include wearing PPE when necessary.

Outcome 1

Written or oral evidence is required to show that the candidate has identified at least two examples from each of the following factors when considering the siting, construction and type of a composting system.

- ◆ accessibility
- ◆ environment
- ◆ materials and construction methods
- ◆ management

Outcome 2

Performance evidence is required to show that the candidate, under supervision, can distinguish between waste that can be added to a composting system and waste that should not. The candidate must handle the waste appropriately, selecting and using the correct tools. Effective completion of the task will include correct cleaning of tools and the correct storage of materials and tools.

The performance evidence must show that the candidate has, under supervision:

- ◆ correctly identified at least two tools used in maintaining a composting system
- ◆ been able to sort waste appropriately on at least three occasions
- ◆ added the correct waste to a composting system on at least three occasions

Tasks must be completed in a safe manner at all times and comply with current Health and Safety legislation.

Outcome 3

Performance evidence is required to show the candidate has used the products of a composting system in a horticultural activity. The evidence must show that the candidate has used the products of composting on at least one occasion in a horticultural activity that covers one of the following circumstances and carried out under supervision.

- ◆ mulching
- ◆ digging
- ◆ trenching
- ◆ sterilising

National Unit specification: statement of standards (cont)

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Effective completion of the task will include correct selection, use and cleaning of tools and equipment, the correct storage of materials, tools and equipment, and the proper disposal of any waste materials. Tasks must be completed in a safe manner at all times and comply with current Health and Safety legislation.

National Unit specification: support notes

Unit title: Horticultural Composting (SCQF level 4)

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 is an optional Unit of the National Certificate in Horticulture (SCQF level 4), but could also be taken as a freestanding Unit.

This Unit is aligned with the following National Occupational Standards:

CU71 Assist with the preparation of growing media

It is considered essential that the centre has a functioning composting system in place for this Unit to have relevance. A composting system can take many forms, range greatly in size and be managed in many ways. There is no stipulation on the type of system to be in place but it is expected that it will be representative of the type of system a candidate might come into contact with elsewhere in the industry.

Outcome 1

It is expected that Outcome 1 will take the form of a theoretical study on the siting and construction of a composting system, focusing on the range of factors that would be considered if a new system were being established.

Accessibility — where in a garden or other horticultural establishment would a compost system be best positioned and what needs to be considered.

Environment — what environmental factors need to be considered, such as aspect, shade, cover, base, etc and how might these affect considerations.

Materials and construction — What are the relative advantages and disadvantages of different building materials and how might they be put together.

Management — The different types of systems and how they work, from single bins or free standing heaps to multi bay systems.

It is in this part of the Unit that the candidate should be introduced to the range of options available for composting garden waste and should include the making of leaf mould. They should be introduced to the way in which decomposition occurs, using simple terms. The focus should be on the type of material being added, the mix of 'wet' material and 'dry' material. Studies should look at appropriate sources of wet and dry material, including grass clippings, kitchen waste, plant matter, leaves, etc. Studies should also consider inappropriate material, waste that should not go on the compost heap such as soil, perennial weeds, cooked food, etc.

National Unit specification: support notes (cont)

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Outcome 2

In this practical part of the Unit it is expected that the candidate would be working in a horticultural setting and generating compostable waste. The candidate would ideally learn to distinguish between materials that can go on the compost heap from materials that should not. Waste from other sources, such as kitchen vegetable peelings and the like could also be included here, giving the candidate the opportunity to see how to add all sorts of waste, in what proportions and how this might be mixed with other types of waste to ensure the compost heap remains effective. The job of adding suitable material to the compost should become routine and take place regularly throughout the course of the year.

The candidate would select their own tools to undertake the job of collecting, sorting, adding, mixing and tidying up and be encouraged to make their own judgements, but should mainly work under supervision. During the process of adding waste to the system, it would be advantageous for the candidate to observe some of the organisms undertaking the decomposition (ie worms) and feel the heat generated in an active heap.

Outcome 3

The aim of this part of the Unit is to allow the candidate to see what happens to composted material once the process is complete. By doing this, the candidate will be able to 'close the gap' on the whole process. This is considered an important aspect of the Unit where the candidate can see the finished product and relate it to the initial 'raw materials'.

It is expected that the products of composting will be used in some way in a horticultural setting, with it being used in a garden, on an allotment or put through a soil steriliser for use as a growing media additive. The candidate should select the correct tools for the given task, carry out the tasks safely, under supervision and then help with tidying afterwards.

Note:

In some circumstances, prior permission to site a composting system must be sought from the Scottish Environmental Protection Agency (SEPA).

It is expected that the composting system will not receive additions of any cooked food waste.

Guidance on learning and teaching approaches for this Unit

Outcome 1

The candidate should be taken through the options of siting, materials, construction methods and management. Through the use of a case study, project or other research based activity, where the candidate or candidates working as a team, investigate options and make suggestions. Use should be made during this process of local and national composting initiatives and could link in well with discussions on recycling and waste reduction in general. Candidates might participate in a problem solving process where they are given the task of designing posters or leaflets to encourage others to start composting at home.

National Unit specification: support notes (cont)

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Outcome 2

This would encompass a practical approach where the process of sorting waste, adding it to the heap and other practical work is carried out, under supervision, in a realistic environment. This work should become routine during every-day horticultural tasks performed by candidates. The tutor should demonstrate tasks to the candidate, who should then be given the opportunity to carry them out. Composting activities undertaken in other horticultural settings, visited by the candidate, should be investigated and any opportunity to observe local authority large scale systems should be taken. Team working should be encouraged.

Outcome 3

The candidate should be made aware of the options available for using the products of composting. While it is not necessary for them to have a go at each one, it is important they are shown viable routes for using compost in a way appropriate to the horticultural setting. There is scope here for weed germination tests to be carried out to determine the level of weed seed contamination. pH and nutrient analysis may also be undertaken on the product enabling comparisons to be drawn with other types of soil conditioners and growing media.

While it is seen as beneficial for the Outcomes here to be undertaken in the order as written, it is understood that this may not always be possible. However every effort should be made to ensure the candidate understands the natural sequence of mixing organic material, its decomposition and subsequent re-use.

By adopting the above learning and teaching approaches and/or through the Outcomes and corresponding Evidence Requirements, the Unit should provide candidates with an opportunity to develop the following essential skills for life, learning and work:

Employability — through developing practical skills to industry standards and working on time limited tasks.

Citizenship — the Unit could provide opportunities to demonstrate citizenship skills if the Unit is delivered as part of a community project for a local school, hospice or charity. The candidate would also be gaining a greater understanding of the importance of waste reduction by everyone.

Sustainability — the Unit could develop skills in sustainable development as it focuses on the real benefits of waste reduction, the importance of composting in that process and the value of the products of composting in sustaining soil health.

National Unit specification: support notes (cont)

Unit title: Horticultural Composting (SCQF level 4)

Guidance on approaches to assessment for this Unit

Outcome 1

Written evidence might be derived from a case study or project brief, with the candidate working individually or participating in a group that investigates, researches, collates and presents the information that covers the evidence range. Candidates must be assessed individually however to ensure that individually they meet the requirements of the Outcome and PCs. Short answer or multiple choice questions that cover the evidence range may also be used.

Outcomes 2 and 3

Practical work may be assessed with the use of an observation checklist, developed to record the candidate's efforts on a number of occasions. The candidate may supplement this with a record of work that might include photos or other electronic evidence that can be authenticated by the assessor.

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 social software. 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)*.

Opportunities for developing Core Skills

In this Unit candidates will be introduced to the basics of composting; this includes the siting and construction of compost bins, the selection of suitable waste to add (kitchen vegetable scraps, etc if available), its mixing and ultimately the use of the products of composting. The candidate will also discover why composting is such an environmentally beneficial activity to undertake. By adopting the learning and teaching approaches above and through the Outcomes and corresponding Evidence Requirements, the Unit should provide candidates with the following opportunities.

National Unit specification: support notes (cont)

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Candidates will:

- ◆ identify, assess the relevance and consider the significance of a range of factors that would affect the siting of a compost system
- ◆ work co-operatively with others to ensure waste is sorted appropriately
- ◆ interpret guidelines on sorting, adding and mixing waste into the compost system
- ◆ interact with others in the maintenance of a composting system and in the use of the products of a composting system

This means that as candidates are doing this Unit they will be developing aspects of the Core Skills in *Communication*, *Problem Solving* and *Working with Others*.

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

History of changes to Unit

Version	Description of change	Date

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