Unit 29: Plant Propagation Activities

Delivery guidance

Approaching the unit

This unit covers the underpinning knowledge and practical actions involved in plant propagation and subsequent aftercare all the way through to the development of a saleable plant. Learners wishing to follow a career in working on nurseries or the supply of plants within a garden estate will be able to use the knowledge and skills gained in this unit to work with a range of plant production systems, and it is important that they are able to access a range of plant species and facilities in order to carry these out.

Work experience in a relevant setting will be invaluable to learners. Local employers and placement providers should be encouraged to take an active part in assessing their capabilities. Witness statements can and should also be used, in order to provide evidence of meeting assessment criteria. Local growers and estate managers could be approached to take groups of learners on tours of their propagation and growing units, showing learners the reality of different approaches to dealing with a range of plant species in different production programmes.

The unit may be best served by initially delivering set theory-based sessions followed by a range of practical tasks to cover individual propagation techniques through to weaning young propagated plants. Learners will need access to the appropriate environment and facilities and equipment required to carry out a range of propagation activities, as well as resources related to research, e.g. the use of internet and library facilities:

- structures (e.g. greenhouses and/or polythene tunnels)
- specialised equipment and materials (e.g. irrigation systems, fertiliser distributors)
- manual/mechanical tools (e.g. secateurs, digging forks and rotovators)
- access to plant collections (e.g. edible and ornamentals).

The delivery of the unit will involve practical assessments, written assessments and visits to suitable plant collections and employer premises.

The use of virtual learning environments (VLE) for learners to share their knowledge of propagating and growing on of various plant species is an excellent way of drawing upon resources that learners can bring to their learning experience. This could include links to relevant professional websites and/or employers, stored handouts to cover class-based activities, videos of key techniques or an overview of environmental factors and/or physical structures, other units in the learners' programme such as *Plant and Soil Science*.

If using employer resources for work experience or a visit, tutors should make supervisors aware of the requirements of the unit before any work-related activities are undertaken, so that naturally occurring evidence can be collected at this time. For example, learners may have the opportunity to carry out pre- and post-propagation techniques and they should ask for observation records and/or witness statements to be provided as evidence for this.

Visiting expert speakers from the industry could add to the relevance of the subject for learners. For example, a national society for gardening or commercial growers or horticulturists could talk about their work, the plants they grow and the propagation and production methods they use.

Health and safety issues relating to working with plant propagation materials and equipment must be emphasised and reinforced regularly. Risk assessments must be undertaken before practical activities. Adequate personal protective equipment (PPE) must be provided and used following the production of suitable risk assessments. Tutors should consider integrating the delivery, private study and assessment for this unit with other relevant units and assessment instruments learners are taking as part of their programme of study.

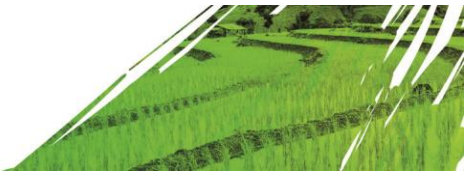
Delivering the learning aims

Learning aim A explores the factors affecting successful plant propagation, including the various ways in which environmental conditions impact upon plant growth. Environmental factors such as relative humidity, temperature, gases and light could be delivered through team teaching and linked to science-related units. Ideally, suitable slide presentations with opportunities for learners to be questioned and quizzed could provide a useful tool in determining current levels of knowledge and understanding. This should then in turn be reflected by accessing centre resources such as glasshouses, polythene tunnels and other structures to demonstrate how the environment affects plant growth. If this is limiting at the centre, local employers should be contacted for offsite visits. This would give learners the opportunities to question employers, taking notes and potentially even photographs of the various areas to cover environmental factors impacting on growth, and physical structures suitable for propagating plants.
Invite guest speakers to the centre to discuss and show learners planning schedules for various plants, including planning components and propagation protocols, which should prove to be insightful. Alternatively, tutors should be able to use various examples from the centre and known employers to offer a class-based activity to fully explore and investigate the use of planning schedules for specific plants. This could be through group work, with learners developing schedules to practise prior to the formal assessment by using a wide range of online resources through the VLE to complete their schedules.

Learners may be able to incorporate their own experiences of plant propagation into the sessions, which will help provide them with a basis for exploring the range of environmental conditions essential for the successful propagation of plants. Ensure that you make good use of this, reinforcing the knowledge gained and linking this to planning and developing propagation schedules. It is possible in this unit to link the opportunities for gathering evidence for learner skills development with what learners are actually carrying out on a daily basis.

Learning aim B is concerned with undertaking seed and vegetative propagation to meet production requirements and introduces the health and safety requirements for meeting the best practice standards. It is important to ensure that this is embedded into learning aim C as well, in order to make sure that learners always maintain their personal safety. Learning aim B addresses the collection and preparation of propagation material, along with preparing media for propagation and establishing it in the propagation environment. Learners will need to collect, prepare and establish propagules. A diary or log of activities, or observation records and/or witness statements would be a good way of recording evidence of practical skills development.

Full use of the centre resources and access to employer premises would be an ideal way of covering the practical content of learning aim B. Ideally, tutors will need to balance class-based theory sessions to build up knowledge and understanding with the practical content using slide presentations, including video links and full use of centre VLE. Theory sessions should reflect current industry standards, which could also be achieved by running sessions at employer premises with the employer taking the lead in delivery and supported by the tutor. Practical activities could also be built in for specific activities such as preparing growing media for propagation of specific plants and/or using appropriate onsite



structures to ensure environmental aspect of propagation is covered. Access to plant collections, relevant tools and equipment (e.g. secateurs, grafting and budding knives) and storage and/or growing facilities (e.g. greenhouses or polythene tunnels) are essential in order to undertake various propagation techniques as per the unit guide. Where resources are limited, it is vital to develop working relationships with local employers. Not only may their facilities be potentially used, the employer could also be an ideal asset for first-hand knowledge and experience.

Due to the seasonal nature and timings of events, learners should be given the opportunity to access plants to meet the unit content for both learning aims B and C, in order that both seed and vegetative propagation techniques can be fully explored.

Learning aim C focuses on the aftercare of plants post-propagation, plant care and the monitoring of plants up to sale. There may be some initial challenges with some learners recognising the most appropriate aftercare techniques to use, or even being able to correctly identify pest, diseases, weeds and disorders.

Utilise learners who have a good understanding of this knowledge to mentor those who are finding it more difficult. Often this is a useful way to engage the class and promote a deeper understanding of the requirements and processes involved.

It would be worth visiting local nurseries to see how plants are developed. Discussions with local employers over the assessment process could mean learners are assessed on real-life projects at employer premises. Evidence could be in the form of witness and/or observation records to help support a log detailing the techniques used. More able learners should be encouraged to evaluate the process of weaning plants in readiness for sale. This could be through learners completing an evaluation of specific processes for specific plants in the form of an essay or further extending their log records and completion of monitoring records.

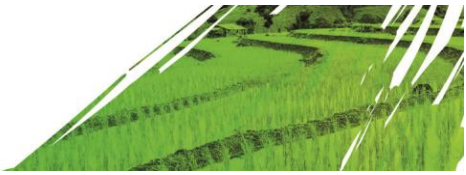
Assessment model (in internally assessed units)

Learning aim	Key content areas	Recommended assessment approach
A Explore the factors affecting successful plant propagation to produce propagation schedules	**A1** Environmental conditions necessary for propagation **A2** Physical structures for managing the propagation environment **A3** Planning schedules for targeted plants	A report on the environmental conditions and facilities needed to enable the production of propagation schedules for two named plants Propagation schedules
B Undertake seed and vegetative propagation techniques to meet production requirements	**B1** Collection and preparation of propagation material **B2** Preparing growing media for propagation **B3** Establishing propagation material in the propagation environment	Evidence includes: ● photographic evidence of propagation and aftercare tasks carried out covering both seed and vegetative methods, supported by a log detailing the techniques used ● photographic evidence of the initial aftercare, ongoing plant care supported by learner monitoring records.
C Undertake the aftercare of propagated plants to achieve successful establishment	**C1** Initial aftercare **C2** Ongoing plant care and monitoring	

Assessment guidance

For learning aim A, learners must explain the environmental conditions and facilities suitable for plant propagation by different methods. Tutors should identify the methods and facilities through discussion with learners. Evidence needs to be report-based; however, it could take the form of a pictorial presentation with notes or a slide presentation. Learners will also need to produce suitable propagation schedules, identifying the stages of the propagation cycle and produce this schedule showing these for a seed and a vegetative propagated plant species. Tutors should identify the species chosen through a discussion with learners. Evidence could be in the same format as the report or through the completion of relevant pro formas.

For learning aim B, learners should prepare appropriate growing medium that they will use for the propagation of plants. Tutors should identify the species chosen through discussion with learners. After the preparation of media, learners must consider what propagation method they will use, and carry out the appropriate techniques to produce suitable plant material identified for propagating. For seed, learners must consider what seed treatment method they will use to overcome dormancy and carry out the appropriate techniques to produce suitable seed for sowing. Evidence could be through tutor and/or employer observations during practical activities and the production of a production log, which could also be supported by the completion of planning schedules in learning aim A. Learners will need to set up the appropriate environmental conditions for their chosen propagation method and monitor the plants for dealing with problems that may occur. Learners will continue to keep records in their production log. Evidence could be the same as for earlier



tasks through tutor and/or employer observations and the completion of a production log.

For learning aim C, learners should record observations in their production logs and decide when the plants are ready for potting up. After potting up, learners should review propagation schedules that they produced and recommend any changes that they feel may be necessary. Evidence could be produced through the use of tutor observations, production logs and monitoring records.

Getting started

This provides you with a starting place for one way of delivering the unit, based around the recommended assessment approach in the specification.

Unit 29: Plant Propagation Activities

Introduction

This unit will help prepare learners for a career in the propagation and supply of a range of plants for different purposes, such as preserving the natural environment, for food production and for areas that will decorate urban and rural green spaces.

Tutors can begin the delivery of this unit by defining what is meant by 'plant propagation activities' and the range of plants learners will be working with. This will vary depending on centre facilities and their links to local employers. Tutors should also summarise the current national situation with regard to plant propagation and forge early links to potential employment opportunities.

Learners will need access to the appropriate environment and facilities and equipment required to carry out a range of propagation activities, as well as resources related to research, for example, the use of internet and library facilities. This will include structures, specialised equipment, manual/mechanical tools and access to plant collections. The delivery of the unit will involve practical assessments, written assessments, visits to suitable plant collections and employer premises.

Tutors should aim to use as wide a range of delivery techniques as possible. Lectures, discussions, seminar presentations, practical demonstration, research using the internet and/or library resources and the use of personal and/or industrial experience (e.g. growers or plant breeders) would all be suitable. In all cases, delivery should stimulate, motivate and educate the learner.

Learning aim A – Explore the factors affecting successful plant propagation to produce propagation schedules

To introduce the unit, facilitate a class discussion of what is understood by the term 'plant propagation,' thereby establishing the levels of experience that learners already have of the subject.

- For learning aim A1, tutor could deliver a presentation and incorporate a Q&A session to explore how environmental factors (microclimatic conditions) impact on plant growth in terms of propagation. Such factors include humidity, temperature, gases and light.
- Learners may benefit from visiting the centre's propagation and production unit or the tutor could arrange a visit to a local grower or private estate, in order for learners to observe how the environment can be manipulated to enhance the propagation of propagules (e.g. those produced from cuttings or seeds). This would also give learners the opportunity to explore the use of soil or soilless media as a material that will impact on nutrient availability and moisture levels. Learners should take notes and use relevant media to record images, such as potentially recording conversations in order to gather information for their production and propagation schedules.
- Learners to carry out independent research, exploring how other organisms such as bacteria, fungi and pathogens such as pests and weeds affect the environmental conditions required for successful plant propagation. Learners could then use this information to produce and propagate schedules using sub-headings, such as Pest and Disease Control and/or Weed Control. Depending on the impact that an organism has on a plant species, factsheets could be compiled and attached to the production and propagation schedules.
- For learning aim A2, learners could form into small groups to produce and deliver a presentation discussing the advantages and disadvantages, as well as the suitability, of physical structures involved in the successful propagation of plants, e.g. structures, equipment, covering and construction materials.

- Learners could conduct further research into the range of materials used in the construction and cladding of structures, identifying particular benefits and limitations of the materials available.
- Learners would benefit from a guest speaker visiting the centre to discuss the challenges and benefits of the propagation systems they use. If possible, this could be extended by arranging for learners to visit one or more local sites to see these in action.
- Tutor can deliver a presentation to learners on the ways that specialist propagation machinery and equipment is used to enhance the propagation environment. Again, where possible, this should be linked to the centre's own specialist resources or could be observed offsite at an employer's premises or those of a large private estate and/or garden.
- For learning aim A3, tutor could deliver a presentation and incorporate a Q&A session to explain planning schedules, their key components, how they are put together and their purpose in plant production. Tutor should draw from the centres current practice and that of local employers to show a range of examples. There is potential to spread this over two or three sessions:
    - Tutors to introduce planning schedules as a class-based presentation, exploring why they are essential to the successful production of plants. This is an ideal opportunity to gauge learners' current knowledge and understanding. Provide a gapped handout and examples of planning documents.
    - Tutor-led practical sessions will be required to demonstrate the importance of available space and its allocation to crops. Learners could be involved in a number of crops from the propagation and planting out stage by mapping out areas, working out space allocation and timing the availability of resources. This is a good opportunity to gather evidence such as witness statements, and observation records, as well as taking photographs and/or videos.
    - Tutors to demonstrate how production and propagation schedules are populated. It is important that crops are not taken into isolation, as ultimately learners will need to understand how multiple crops are coordinated and grown simultaneously.
- Learners could look at case studies outlining a range of production systems for a range of specific plants, in order to develop their schedules that can maximise plant production. Centres with access to production and propagation facilities should make use of relevant staff to discuss the planning process for specific plants. With this information, learners could work in pairs to develop relevant schedules prior to the formal assessment. Where onsite access is limited, tutors will need to arrange visits to appropriate employers. Learners will need to take notes and transfer their findings to the blank template schedules in pairs.
- Learners should be given a clear brief of the assessment requirements and use independent study time to practise their report production skills. Submitting their draft online will allow tutors to feed back to learners and provide guidance prior to completion of the summative assignment.

Learning aim B – Undertake seed and vegetative propagation to meet production requirements

Depending on the programme of study that learners are on and the access they have to plant material, the health and safety aspect of this learning aim should be covered first before the rest of the content.

- For learning aim B1, learners will need to discuss the hazards particular to working with different:
    - plant species
    - propagation techniques
    - uses of equipment and materials, including cleaning and storage
    - horticultural tasks.

This could be extended to discuss the risks of accidents taking place and ways to help prevent injury to learners and other people.

- Give learners partially completed risk assessments and ask them to consider what else needs to be present so that the assessments are effective. Ask learners to consider the control measures that should be followed in order to minimise the risks when completing horticultural husbandry tasks.
- Tutors to show learners the different types of personal protective equipment (PPE) and discuss how it is selected and used for particular situations.
- Tutors to conduct a short presentation that outlines the relevant legislation in terms of rights and responsibilities when working within a propagation unit.
- Learners could work in pairs to create a series of risk assessment for tasks involving particular propagation techniques, following a recognised body for health and safety like the Health and Safety Executive's 'Five Steps' format in the UK. All learners will need to produce relevant risk assessments for all propagation techniques assessed.
- Discuss with learners the various ways of collecting and preparing material for propagation (i.e. seed and vegetative material like perennials). Allow learners access to different plant materials so that they can develop their practical skills. Consider the time of the year and availability of suitable materials in order to do this effectively.
- Tutor to demonstrate best practice to learners when collecting and managing appropriate material for the intended propagation technique, incorporating a Q&A session to establish the levels of experience that learners already have.
- Tutor to introduce stock beds. Discuss why the maintenance of parent plants is key to ensuring propagation material remains appropriate while demonstrating how stock plants are maintained. Learners will require access to relevant plant species in order to undertake husbandry techniques at the most appropriate time of the year. Learners will need to collect evidence that shows they have the relevant assessment criteria. This could be in the form of witness statements, observation records and the use of video clips and/or photographs.
- Demonstrate good practice when handling plant material and carrying out propagation tasks, such as processing, storage and management of stock plants to promote juvenile or adult material. This could be *in situ* when circumstances allow, as well as through the use of video clips. Learners could film peers demonstrating good practice, and these video clips could form part of the evidence towards meeting assessment criteria, and perhaps be useful as future class resources.
- Learners would benefit from a guest speaker from industry or a visit to an organisation that collects, prepares and processes its own and/or purchased plant material for propagation. This could be taken further by learners, as they can carry out their own independent research into the processing of specific plant species, covering both seed and vegetative materials.

- Tutor could deliver a presentation and incorporate a Q&A session to explain seed dormancy and how it can alleviated (e.g. scarification and stratification).
- Allow learners access to a range of plant seeds, in order to stimulate discussion of the various factors impacting specific plant species.
  Show learners video clips of the practical processes involved in overcoming seed dormancy prior to demonstrating good practice for individual plant species using centre's facilities. Learners could demonstrate good practice and evidence can be used towards meeting the assessment criteria.
- Tutor to deliver a presentation and incorporate a Q&A session to explain what plant health regulations are, how they are used and their purpose in propagation, e.g. plant passports.
- Learners could be allowed access to samples of various plant health documentation, so that they could conduct further research related to specific plant species.
- For learning aim B2, tutor could introduce the topic of growing media and seedbed preparation, and facilitate a class discussion regarding raised beds, the use of composts and seedbeds to raise plants propagated by seed and vegetative methods, while establishing the levels of experience that learners already have.
- Learners are to carry out independent research into recognising compost formulas, such as loam-based and loam-less seed and cutting mixes. Ensure that their research covers ideas such as preparation techniques (i.e. hand or mechanical means) and use of a range of aggregates to enhance propagation, such as sterilised loam, peat, coir and rock-wool. This information will be required when tutors are assessing the practical tasks for relevant underpinning knowledge and understanding about various growing media.
- Tutor to show learners a range of seed sowing techniques and discuss how they are selected and used for particular situations in seed propagation. Examples include use of containers and nursery beds, manual techniques, i.e. placement, and mechanical techniques, i.e. seedling machines.
- Tutor to conduct a presentation that outlines the relevant factors important to successful germination. Learners could research methods used to enhance this process (e.g. germination cabinets and soil cultivation techniques) and report back to the group their findings.
- Tutor to demonstrate good practice when propagating plants by vegetative methods. This could be *in situ* when circumstances allow, as well as through the use of other media. Learners could record peers demonstrating good practice. This evidence could then form part of the evidence towards meeting the assessment criteria, and perhaps be useful for future resources. It is important that learners use the following vegetative propagation methods:
  - division
  - cuttings (e.g. softwood, semi-ripe, hardwood, root, leaf or leaf section and leaf bud)
  - layering
  - grafting.

- Learners should carry out independent research on the natural ways in which plants vegetatively propagate. This will be used to help populate their propagation records.
- For learning aim B3, tutor could deliver a presentation and incorporate a Q&A session to explain the methods used in enhancing the perfect environmental conditions for propagating a range of plants by seed and vegetative methods.
- Allow learners access to a range of facilities, in order to stimulate discussion of the different pieces of equipment available to enable optimum rooting and/or shoot production and subsequent establishment (e.g. mist and fog units, heated, bin beds and benches).
- Learners should be encouraged to keep records of all plants propagated. Tutor to hand out partially completed propagation records during the practical sessions and learners could discuss and complete the records accordingly. This could be planned throughout the year, and when learners are confident, they will need to complete blank propagation records templates as and when relevant propagation techniques are undertaken.
- Tutor could deliver a presentation covering the establishment needs of specific plant species, thereby facilitating class discussions and establishing the levels of experience that learners already have. Learners could research specific aspects that cover moisture levels, light, hygiene, pest, disease, disorders and weeds, as well as the process of germination and rooting, and report their findings back to the class using named plant examples.
- Learners can take part in knowledge quizzes on propagating specific plant species and establishment to consolidate their learning.
- Learners should spend a significant length of time addressing the various techniques of propagation for both seed and vegetatively raised plants through practical activities and duties at the centre (or when on a related work placement). Learners should gain evidence for their portfolio through the use of videos, witness statements and professional discussions with relevant assessors and/or employers. They should be aware that their attention to health and safety and professional working responsibilities is a key part of meeting the assessment criteria in order to pass this unit. It would be useful for learners to keep a reflective diary throughout the process, as this will assist in compiling the evidence for the portfolio later on.
- Learners will need to spend time compiling their portfolio and organising the evidence into a logical format for submission. They will need to spend time ensuring they have reflected on the range of horticultural husbandry techniques, paying attention to both the practical and theoretical aspects of undertaking propagation of plants by seed and vegetative methods.

Learning aim C – Undertake the aftercare of propagated plants to achieve successful establishment

- For learning aim C1, tutor could deliver a short presentation and incorporate a Q&A session to explain which factors need to be considered immediately post- propagation and through to the plant species being ready for sale and/or used in the landscape. Examples include plant protection and initial aftercare such as pruning and feeding. Learners could explore and use each of these factors for a range of plant species.
- Allow learners to access a range of plant species in order to stimulate a class discussion on the positive effects that weaning has on the quality of plants produced. A practical session could take place where learners form into pairs to identify plants for aftercare, and carry out the key stages of aftercare while gathering evidence for their assessments such as witness statements, photographs and/or use of video. These practical sessions may take place over time in order to take into account seasonality.
- For learning aim C2, tutor to demonstrate good practice when handling propagated plants and carrying out husbandry techniques, including the monitoring of plant species. This could be *in situ* when circumstances allow, as well as through the use of various media, such as digital photography and/or use of video, VLE linked to web resource *YouTube* videos. Learners could use a range of media, such as video, to film peers demonstrating good practice. These could then form part of the evidence towards meeting the summative assessment criteria, and perhaps be useful as a future class resource.
- Tutor can arrange for a guest speaker (or a trip to a local grower, private estate and/or public garden) to come into the centre to discuss with learners how their industry manages a range of techniques to ensure post-propagated plants are managed through to point of sale or use in the landscape.
  Learners could then spend a significant length of time addressing the various techniques of post-propagation through practical activities and duties at the centre, (or when on a related work placement) in order to cover the unit content. Learners should gain evidence for their portfolio through the use of photographs, witness statements and professional discussions with relevant assessors and/or employers. They should be aware that their attention to health and safety and professional working responsibilities is a key part of meeting assessment criteria in order to pass this unit. It would be useful for learners to keep a reflective diary throughout the process, as this will assist in compiling the evidence for their portfolio. It will also be important that learners complete the relevant records according to centre's protocols.
- Learners will need to spend time compiling their portfolio and organising the evidence into a logical format for submission. They will need to spend time ensuring that they have reflected on the range of horticultural husbandry techniques in order to ensure that plants are ready for sale or use in the landscape.

Details of links to other BTEC units and qualifications, and to other relevant units/qualifications

This unit links to:

- Unit 1: Plant and Soil Science
- Unit 4: Developing a Land-based Enterprise
- Unit 27: Identification, Planting and Care of Plants

Resources

In addition to the resources listed below, publishers are likely to produce Pearson-endorsed textbooks that support this unit of the BTEC Internationals in Agriculture/Horticulture/Land-based subjects. Check the Pearson website (http://qualifications.pearson.com/endorsed-resources) for more information as titles achieve endorsement.

Textbooks

Adams C, Early M, Brook J and Bamford K, *Principles of Horticulture: Level 3* (1st Edition), Routledge, 2014 ISBN 9780415859097 – a useful textbook explaining the fundamentals of growing plants with a strong link between plants science and horticultural practices

Beckett KA, *Growing Under Glass – Royal Horticultural Society's Encyclopaedia of Practical Gardening* (3rd Revised Edition), Mitchell Beazley, 1999 ISBN 9781840001549 – a useful, easy to follow guide with step-by-step illustrations and essential technical information

Buczacki S and Harris K, *Pests, Diseases and Disorders of Garden Plants* (4th Revised Edition), William Collins, 2014 ISBN 9780007488551 – a practical, highly illustrated guide to dealing garden hygiene and plant care and control, including an assessment of pesticides and chemicals. Special attention is given to the increasing importance of biological control in gardens

Hartman H, Kestler D, Davies F and Geneve R, *Hartmann and Kesters Plant Propagation: Principles and Practices* (8th Edition), Pearson, 2010 ISBN 9780135014493 – a comprehensive text covering all forms of propagation from the science of rooting through to the production of a saleable plant

Journals

The Garden – a monthly magazine produced by the RHS, useful for tutors to keep up-to-date with current research and best practice in matters relating to practical gardening, plants and advice

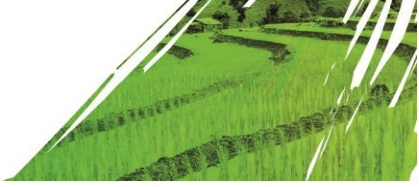
Horticulture Week – this weekly magazine is useful for tutors to keep up-to-date with current research and best practice in matters relating to the sustainable management of trees and shrubs

Websites

'BBC.co.uk' – search for the archived webpage 'Gardening guides', which summarises a range of propagation topics that can be further explored. In some cases, the text is supported by video footage demonstrating sound step-by-step technical advice and guidance

'The International Plant Propagators Society' – this website links to a global network of professionals with an interest in plant production

'The International Society for Horticultural Science' – useful website for accessing information related to plant science in horticulture, including access to a comprehensive archive of publications



'The Royal Horticultural Society' – a good starting point for accessing information and further links relating to propagation techniques

Pearson is not responsible for the content of any external internet sites. It is essential for tutors to preview each website before using it in class so as to ensure that the URL is still accurate, relevant and appropriate. We suggest that tutors bookmark useful websites and consider enabling learners to access them through the school/college intranet.