
NURSERY PRODUCTION
Propagate plants using tissue culture

level:	4
credit:	10
final date for comment:	February 2008
expiry date:	December 2009
sub-field:	Horticulture
replacement information:	This unit standard replaced unit standard 12405.
purpose:	People credited with this unit standard are able to: maintain hygiene; prepare media; propagate plants using tissue culture; establish and harden off plants; and keep records of propagation by tissue culture.
entry information:	Recommended: Unit 20556, <i>Demonstrate knowledge of plant propagation</i> , or demonstrate equivalent knowledge and skills.
accreditation option:	Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider.
moderation option:	A centrally established and directed national moderation system has been set up by the New Zealand Horticulture Industry Training Organisation.
special notes:	<ol style="list-style-type: none">1 <i>Workplace practices</i> refers to the way a particular task is carried out on a horticultural property to achieve the desired outcome.2 Legislation relevant to this unit standard includes but is not limited to the Health and Safety in Employment Act 1992, the Resource Management Act 1991, and their subsequent amendments.

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- 3 Work may involve exposure to chemical, dangerous, or hazardous substances. Safety procedures are observed in accordance with NZS 8409:2004 *Management of Agrichemicals*, available from Standards New Zealand <http://standards.co.nz>, or the NZ Agrichemical Education Trust <http://growsafe.co.nz>.

Elements and Performance Criteria

element 1

Maintain hygiene.

performance criteria

- 1.1 Containers, instruments, and water are sterilised and stored aseptically in accordance with workplace practices.
- 1.2 Work surfaces are sterilised and maintained in accordance with workplace practices.
- 1.3 Any equipment used to maintain a sterile work area is operated in accordance with workplace practices.

element 2

Prepare media.

Range: suitable for the production of three named plant species.

performance criteria

- 2.1 Culture media are prepared and added to the containers in accordance with workplace practices.

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element 3

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Range: three named plant species.

performance criteria

- 3.1 Plant material is sterilised and prepared in accordance with workplace practices.
- 3.2 Embryos, meristems or other plant tissues are removed aseptically.
- 3.3 Explants are placed in the culture medium in accordance with workplace practices.
- 3.4 Containers are placed in the culture room in conditions that encourage cell multiplication.
- 3.5 Where necessary further material is removed from cultures, processed, and placed in the culture room for multiplication.
- 3.6 The culture environment is maintained to optimise culture growth and development including shoot and root growth.

Range: temperature, light, humidity, air movement.

element 4

Establish, harden off, and dispatch plants.

performance criteria

- 4.1 Propagated material is removed from culture room and hardened off in accordance with workplace practices.
- 4.2 Conditions are maintained for plant growth and development in accordance with species requirements, buyer specifications, and workplace practices.

Range: may include transplanting one or more times into tubes, cells, trays, pots, or planter bags.

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- 4.3 Plants are hardened off, packaged, and dispatched to buyers on time, and in accordance with workplace practices.

element 5

Keep records of propagation by tissue culture.

performance criteria

- 5.1 Propagation material is labelled and identified in accordance with workplace practices.

Range: may include plant name, date, and batch number.

- 5.2 Records of propagation are kept in accordance with workplace practices.

Range: may include species and/or cultivar, source of propagation material, collection date, processing date, culture used, culture room conditions, any further culturing dates, root and shoot growth development, hardening off date.

Comments on this unit standard

Please contact New Zealand Horticulture Industry Training Organisation
<http://www.hortito.org.nz> if you wish to suggest changes to the content of this unit standard.

Please Note

Providers must be accredited by the Qualifications Authority or a delegated inter-institutional body before they can register credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be accredited by the Qualifications Authority before they can register credits from assessment against unit standards.

Accredited providers and Industry Training Organisations assessing against unit standards must engage with the moderation system that applies to those standards.

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Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for providers wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is covered by AMAP 0032 which can be accessed at <http://www.nzqa.govt.nz/site/framework/search.html>.