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**GENERAL CERTIFICATE IN ORNAMENTAL  
HORTICULTURE LEVEL 1**

**Workbook :**

**Propagate Ornamental Plants from Seed**

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**Propagate Ornamental Plants from Seed  
Learner Workbook**

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**A c k n o w l e d g e m e n t s**

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**Developed by**

**Lifestyle College**

**With special thanks to:**

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**Rick Smit from Dynamic Solution Synergies**

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**Study Session Overview**

**Purpose**

The purpose of this study session is to equip you with the skills and knowledge necessary to propagate ornamental plants from seed.

This study session forms part of the General Certificate in Horticulture, NQF level 1 and is aligned with the Unit Standard: Propagate Ornamental Plants from Seed, which carries 5 credits.

**Who is it for?**

This study session and unit standard form the knowledge base for people working with plants within the ornamental horticulture or landscaping industry and gives the learner the skills and knowledge necessary to:

- Prepare for seed sowing.
- Sow seeds manually.
- Apply water to sown seed.
- Maintain an environment for germination.
- Monitor the germination process.

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**What's in it for you?**

The skills acquired in this study session will equip you with the skills and knowledge needed to be able to propagate plants from seed. These skills and knowledge form the basis of your horticultural studies and help you to:

- Select the appropriate growing media and containers.
- Fill seedling containers.
- Prepare a seedbed.
- Explain the importance of correct labeling and documentation.
- Explain the importance of sowing seeds at the correct spacing or density.
- Sow various seed types.
- Explain the reasons why an adequate soil cover must be laid over seeds.
- Apply soil covering.
- Describe the process of batch separation and labeling.
- Explain the necessity of attaining the correct moisture content of the growth media.
- Explain the importance of selecting the correct equipment for the application of water on the seedbed.
- Identify examples of sprinklers and hand held sprays that are suitable for watering a seedbed.
- Identify examples of watering cans equipped with suitably fine nozzles.
- Demonstrate the methods of applying water to ensure that seed displacement will be prevented.
- Describe the factors that affect the rate of germination.
- Explain the importance of monitoring the development of the radicle.
- Inspect the status of the radicle.

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**What about assessment?**

If you can successfully prepare to propagate ornamental plants from seed and answer all the knowledge questions in the summative assessment, you will receive credits for a competent rating on your assessments.

These credits contribute 1 unit standard and 5 credits towards the General Certificate in Ornamental Horticulture, at NQF Level 1.

The laid down policies and procedures with regard to assessment, moderation, RPL and appeals govern this assessment.

**You will be rated "Competent" or "Not Yet Competent" against the assessment criteria.**

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**Unit Standard**

<b>Title</b>	<b>Propagate Ornamental Plants from Seed</b>
<b>Number</b>	119704
<b>Level</b>	1
<b>Credits</b>	5
<b>Field</b>	Agriculture and Nature Conservation
<b>Sub field</b>	Horticulture
<b>Issue date</b>	2006-02-09
<b>Learning assumed to be in place</b>	Demonstrate knowledge and understanding of communication and Numeracy at Abet level 3.

<b>Specific Outcomes</b>	<b>Assessment Criteria</b>
<b>1. Prepare for seed sowing.</b>	1.1. Select the appropriate growing media and container. 1.2. Fill seedling containers. 1.3. Prepare the seedbed. 1.4. Explain the importance of correct labeling and documentation.
<b>2. Sow seed manually.</b>	2.1. Explain the importance of sowing seeds at the correct spacing or density. 2.2. Sow various seed types. 2.3. Explain the reasons why an adequate soil cover must be laid over seeds. 2.4. Apply soil covering. 2.5. Describe the process of batch separation and labeling.
<b>3. Apply water to sown seed.</b>	3.1. Explain the necessity of attaining the correct moisture content of the growth media. 3.2. Explain the importance of selecting

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<b>Specific Outcomes</b>	<b>Assessment Criteria</b>
	<p>the correct equipment for the application of water on the seedbed.</p> <p>3.3. Identify examples of sprinklers and hand held sprays that are suitable for watering a seedbed.</p> <p>3.4. Identify examples of watering cans equipped with suitably fine nozzles.</p> <p>3.5. Demonstrate the methods of applying water, to ensure that seed displacement will be prevented.</p>
<b>4. Maintain the germination environment and monitor the process.</b>	<p>4.1. Describe the factors that affect the rate of germination.</p> <p>4.2. Explain the importance of monitoring the development of the radicle.</p> <p>4.3. Inspect the status of the radicle.</p>

**Embedded Knowledge**

Embedded knowledge is reflected within the assessment criteria of each specific outcome and must be assessed in its own right, through oral and written evidence. Observation cannot be the only assessment.



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**Critical Cross Field Outcomes**

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made – specific outcome 1 and 2.
- Work effectively with others as a member of a team, group, organisation or community. Specific outcome embedded in the learning for this level of learner.
- Organise and manage oneself and one's activities responsibly and effectively. Specific outcome 1 and 2
- Collect, analyse, organise and critically evaluate information. Specific outcome 1 and 2.
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation. Specific outcome embedded in the learning for this level of learner.
- Use science and technology effectively and critically, showing responsibility toward the environment and health of others. Specific outcome 1, 2, 3 and 4.
- Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation. Specific outcome 1, 2, 3 and 4.

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**Unit Standard Accreditation and Moderation  
Options**

1. Internal moderation.
2. External moderation.
3. Moderation of assessment will be overseen by the relevant ETQA, according to the moderation guidelines in the relevant qualification the agreed ETQA procedures.
4. Internal assessment.
5. External assessment with the relevant registered/accredited industry body/ETQA.
6. An Assessor accredited by the relevant ETQA, will assess the Learner's competency.
7. Formative and summative assessment of qualifying Learners against this unit standard should be in alignment with the requirements of the NSB.
8. Practical assessment activities will be used that are appropriate to the contents in which the qualifying Learners are working.
9. Assessment will include self and peer assessment, practical and oral assessment, observations, questions and answers, etc.
10. Direct observation is required in simulated or actual work conditions.
11. Reporting skills are demonstrated by effective communication, using verbal and/or writing skills.
12. Assessment is to be structured to include formative and summative component, as well as the submission of a Portfolio of Evidence.
13. The assessment should ensure that all the specific outcomes, critical cross field outcomes and embedded knowledge are assessed.
14. Specific outcomes must be assessed in their own right, through oral and practical evidence and cannot be assessed by observation only.

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Essential embedded knowledge must be assessed in their own right, through oral and practical evidence and cannot be assessed by observation only.

15. Special outcomes and essential embedded knowledge must be assessed in relation to each other.
16. If qualifying Learners are able to explain the essential embedded knowledge, but are unable to perform the specific outcomes, then they should not be assessed as competent.
17. If qualifying Learners are able to perform specific outcomes, but are unable to explain the essential embedded knowledge, they should not be assessed as competent.
18. Evidence of the specified critical cross-field outcomes should be found, both in performance and in essential embedded knowledge.
19. Assessment activities must be fair, so that all Learners have equal opportunities. Activities must be free of gender, ethnic or other bias.
20. This unit standard can be assessed together with any other relevant registered unit standard.

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## **Who does what?**

**You are expected to actively take part in the lessons by:**

- Asking questions.
- Planning and preparing for your training and assessment.
- Completing the assessment tasks that you are given.
- Telling your trainer when you need help or don't understand.

**Your learning will be supported in the following ways:**

- Your trainer will provide you with all the necessary training material.
- Your trainer will manage the learning process during the training.
- The assessor will plan and prepare you for assessment, assess your competence and provide feedback to you and arrange any follow up assessments that may be necessary.

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**Introduction**

Our learning journey today begins as all good stories do with “*once upon a time....*”

*Once upon a time there was a little seed who loved to play with the wind and roll in the meadows with the other seeds. One night the wind blew wildly in every direction and the little seed was blown all around the valley. When the wind finally died down the little seed was all alone. She was too small to play with any of the other forest creatures and she began to think that she wasn't much use to anyone at all.*

*Many months passed until one day a strong gust of wind blew the little seed all the way across into Blueberry valley. “Wow,” she thought to herself, as she looked across at all the different trees.*

*“Is that you little seed?” asked one little tree. When little seed looked at the tree closely she saw that it was one of her seed friends Birch, except Birch was no longer a seed, she was a little Silver Birch tree.*

*“Hello Birch,” said our little seed looking amazed. “How did you become a tree? Please tell me your secret so that I can become a tree.”*

*“I don't know,” said Birch. “It just sort of happened and it's hard to explain. Ask Willow on the mountain side. Maybe she can help you.”*

*“I think it's different for every seed,” shouted Willow from the mountain side. “Some seeds like the Begonia, Primula, Lobelia and Petunia are so small that they are almost dust-like. Other seeds like the Magnolia, Walnut, Paeony, and Camellia have an oily content and need to find a place to grow as soon as possible after they ripen or they will shrivel up and die. Seeds like the Broad Beans, Runner Beans and chestnuts develop a hard outer skin or coat with time and need to be soaked in warm water for 24 hours before they can grow”. Perhaps Oak who is the oldest and wisest of us all will know more.*

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*Oak who was on the far side of the valley told them, "all seeds grow in their own special way but most begin by finding a piece of warm, wet soil. As the seed takes up the water and warmth from the soil it begins to soften and swell and very soon, before you know it, the seed gets an urge to burst out of its coat. As the seed stretches and 'pops' a young root, called the radicle breaks through the seed shell. This feels so good to the little seed that it stretches again and again and in no time at all the seed doesn't need to hide anymore and a bright green stem, called the plumule shows itself and stretches upwards. But not all seeds find the right place to grow. I have thrown tons of acorns onto the ground below me but just one of my seeds has grown into a beautiful tree."*

*The purple foxglove on hearing Oak started to cry, "I have produced over a quarter of a million seeds but none of my seeds have grown, I wish someone could help my seeds to grow."*

Would you like to learn how to help seeds grow?

Then let's begin our learning journey.

Adapted from The Secret Story by Wynne Cohen.

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**Specific outcomes of this lesson :**

**Maintaining the germination environment and monitor the process.**

After you have worked through Lesson 1, you should be able to:

- Describe and monitor the factors that affect the rate of germination.
- Explain the importance of checking the development of the radicle.
- Inspect the status of the radicle.

**Introduction**

Flowering plants begin their life cycle as a seed which is nature's most common way of producing new plants, this is called propagation. These