

LSOP Title	Pea grafting procedure
LSOP No.	LSOP23
Version	1.1
Location	UQ Node/Centre-wide
Policy/Procedure Link	<a href="#">UQ- Equipment</a> <a href="#">UQ -waste</a>
Risk Assessments	
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## 1.0 Scope

*This procedure covers how to graft pea.*

*This LSOP does not cover pea growth or planting.*

## 2.0 Definitions

Stock – Rootstock


Scion – Young Shoot

## 3.0 Material and Equipment

1. Clear plastic bottles and lids OR large clear plastic cups (mega slushie size)
2. Scalpel
3. Tweezers
4. Rubber Ring (silicon or silastic tubing approx. 2-3mm)
5. Ethanol



## 4.0 Prescribed Actions

1. The scions are planted in multiple lots per pot (say 10 scions per 2L pot), and the rootstocks at 1 or 2 per pot.
2. The plants are grafted at 6- or 7-day old or just after emergence and greening of tissue. If the 3rd leaf (first true leaf) has started rapid growth then it will tend to cause wilting and it is harder to tell when the graft union has connected properly.
3. A horizontal cut is made in the stock 1mm below the first scale leaf and the plumule is discarded. Inspect the cut surface. The sides that correspond to the sides of the positions of the scale leaves are slightly pointed and can be named front and back.
4. A vertical slit is made in the stock to a depth of about 8-10 mm on the same axis as the scale leaves; that is front to back.
5. A ring of silastic/silicon tubing is placed over the stump and left at the top. The best bands are made by cutting 1 mm width rings of flexible silicon or silastic tubing of diameter 2-3 mm, depending on the thickness of the stem.
6. The scion to be used for grafting is removed from the rootstock, by a horizontal cut in the epicotyl above the cotyledons.
7. A wedge the same length as the slit in the stock is cut from the scion by cutting off the sides (left and right) so that the cut surfaces slide against the cut surfaces of the slit in the stock and that the scale leaves of the scion end up in the same axis (or 180°) as the scale leaves of the intact stock.
8. The wedge is slid into the stock and held in place with the ring of silastic/silicon tubing. It may be necessary to open the slit in the stock with some fine tipped tweezers to allow entrance of the wedge.
9.  Bottles with lids (sterilize the base of these with ethanol) or large clear plastic cups are placed over the pots to keep the humidity high. It may be necessary to keep the plants away from strong sunlight during this time. A shade cloth or light weight “see-through” curtain can be placed above the pots to reduce the radiation. The plants are OK if they are not wilting or losing turgidity. These lids of the bottles are removed a few days after grafting to allow more ventilation before the bottle is removed altogether (see appendix for after grafting maintenance). If using plastic cups, these can be propped up using a pipette tip after a few days, before being removed altogether.

## 5.0 Appendix A

### After grafting maintenance

Day 1 Graft seedlings at 6 to 7-d-old, or before considerable expansion of the first true leaf (node 3).

- dribble water around pot if necessary (too much water will cause problems).
- Place plastic drink bottle/giant plastic cup over plant.

Day 2 using a scalpel blade, cut off any cotyledonary buds growing from the stock

- Wipe condensation from bottle/cup.

Day 3 using a scalpel blade, cut off any cotyledonary buds growing from the stock

- dribble water around pot if necessary
- Wipe condensation from bottle/cup
- a small number of plants may cope with the lid being removed from the bottle/cup propped up
- Day 4 using a scalpel blade, cut off any cotyledonary buds growing from the stock Wipe condensation from bottle/cup
- More plants may cope with the lid being removed from the bottle/cup propped up

Day 5 using a scalpel blade, cut off any cotyledonary buds growing from the stock dribble water around pot if necessary

- Wipe condensation from bottle/cup
- Many more plants should cope with the lid being removed from the bottle/cup propped up
- Day 6 using a scalpel blade, cut off any cotyledonary buds growing from the stock Wipe condensation from bottle
- All plants should have bottles without lids
- Day 7 using a scalpel blade, cut off any cotyledonary buds growing from the stock Remove bottles/cups in morning.
- Return 1-2 h later and replace bottles onto pots with wilted plants

Day 8 put plants in direct sunlight

- keep an eye out for cotyledonary buds and remove as necessary
- give liquid nutrient