

Horticulture and Ecology

ENPL 236

Urban planning and Landscape architecture Department

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Buying and planting

Buying

Sources supply

- **Nurseries and garden centers :**
- Advantages: You can see the plant and decide, can buy container when plant establish well, can take it without delay
- Disadvantage: may find popular varieties only, garden are located out of town, number of variety are limited



Buying and planting

Buying

Sources supply

- **Mail order from nursery and online ordering**
- advantages: excellent catalogue you can choose from, they have rare and unusual variety.
- Disadvantage: can not see the plant, can not take your order with you' may be some of your order is out of stock, charge for delivery extra for larger plants, transport may harm the plant.

Buying and planting

Buying

Sources supply

- **Bargain offer nursery:** save money
- Disadvantage: may not find what you want

Buying and planting

Buying

Sources supply

- **The high street shop:** easy to obtain, cheap
- Warm conditions in the shop can lead to drying of plant, buy at the beginning of planting season,

Types of planting material

Container-grown plant



- Bare-rooted
- Pre-packaged
- Balled



- Getting soil ready

- Digging the soil

- Getting plant ready

- Bare rooted

- -balled

- container



Planting

- By seedling
- Bare rooted
- Balled and container plants

Planting

Planting Mixture:
 Make up the planting mixture in a wheelbarrow on a day when the soil is reasonably dry and friable — 1 part topsoil, 1 part moist peat and 3 handfuls of Bone Meal per barrow load. Keep this mixture in a shed or garage until you are ready to start planting.

BARE-ROOTED and PRE-PACKAGED PLANTS

The first step is to mark out the planting stations with canes to make sure that the plants will be spaced out as planned. Next, the planting hole for each shrub or tree must be dug, and the commonest mistake is to dig a hole which is too deep and too narrow. Use the soil mark on the stem as your planting guide. Planting shrubs is a two-person job, but for large shrubs and trees you will need someone to assist you.

- The soil mark on the stem of plants should be used with the bottom of the base.

The hole should be deep enough to allow the soil mark to be at or just below the soil surface after planting.

The hole should be wide enough to allow the roots to be spread out evenly.

Set a board across the top of the hole to ensure correct planting depth.
- Work a couple of handfuls of the planting mixture around the roots. Shake the plant gently up and down and add a little more planting mixture. Firm the surface around the roots with your hands. Do not press too hard.
- Fill in the hole with more planting mixture and firm it down by gentle treading. Do so around all four sides of the hole — this would be done in the later stages of the planting hole, working gradually towards the centre.
- When planting is finished, build a shallow ring of soil around the planting hole. This will form a water-retaining basin.

Add more planting mixture until the hole is full. Tread down once again and then smooth the surface. Spread a little and around the stem so that the surface forms a low dome.

BALLED and CONTAINER-GROWN PLANTS

Never regard container-grown plants as an easy way to plant trees and shrubs. If the environment surrounding the soil ball is not right then the roots will not grow out into the garden soil. This means that it is not enough to dig a hole, take off the container, drop in the plant and replace the earth.

- Dig a planting hole which is large enough and deep enough for the soil ball to be surrounded by a 2-4in. layer of planting mixture.

The hole should be deep enough to ensure that the top of the soil ball will be about 1 in. below the soil surface after planting.

3-4 in. layer of planting mixture
- Water the container thoroughly before planting.

Container-grown plant: Cut down the side of the container when it is stood on the base of the hole. Remove this cover very carefully.

Balled plant: Lift and loosen the top of the packing but do not remove it. If the covering is plastic, cutting or shaking, carefully remove it but do not break up the soil ball.
- Container-grown plant:** Examine the exposed surface of the soil ball. Gently cut away rotting or tangled roots but never break up the soil ball.
- After planting a shallow water-retaining basin should be set up.

Fill the space between the soil ball and the sides of the hole with planting mixture. See above.

Never use ordinary soil — make your mix from a ball-based compost and mineral soil. Firm down the planting mixture with your hands.

Staking



Spacing

- Depend on height of tree and spread

Planting by seeds

Plant life cycle

Seed:

Seed viability

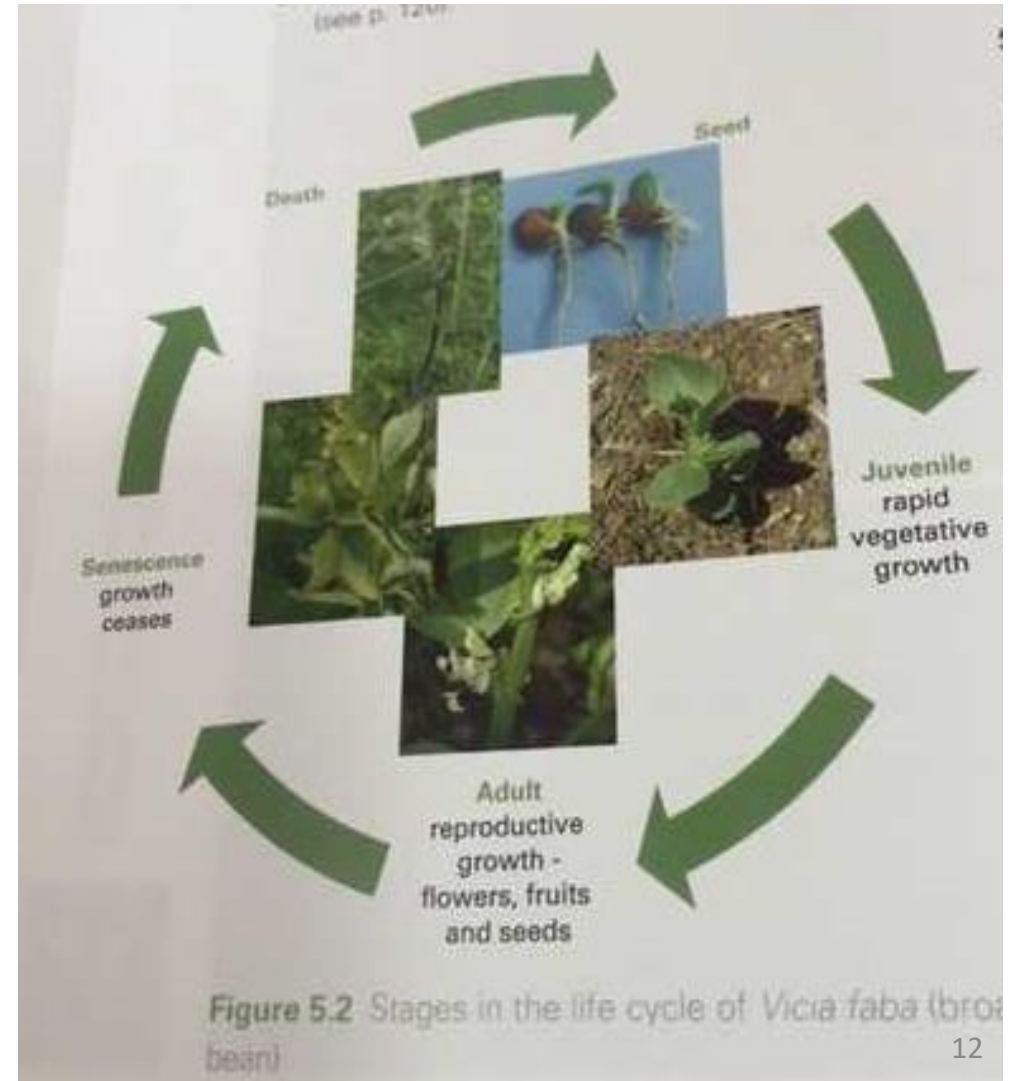
viable: has potential for germination when required external conditions are supplied

quiescent :seed is not viable because external conditions or environmental requirement(water, oxygen, temperature, light) are not present

Dormant: seed does not germinate even the environmental conditions are suitable

Seed germination: is defined as the emergence of young root or radicle through the testa

Germination need water oxygen light and correct temperature



Seedling

Hypogeal germination occur when the cotyledons remain below the ground inside the testa. *Prunus persica* (beach), *Vicia faba* (broad bean)

Epigeal germination occur when the cotyledon emerge above the ground as in *Solanum lycopersicum* (tomato), *Prunus avium* (cherry), *Phaseolus vulgaris* (French bean)

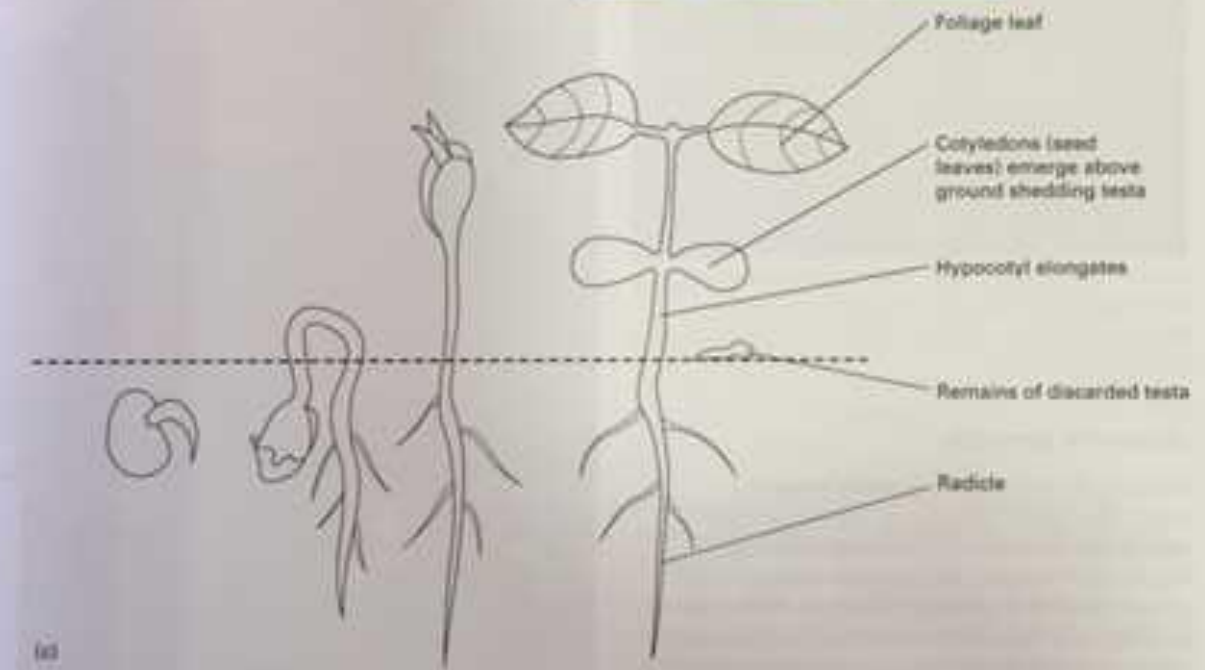
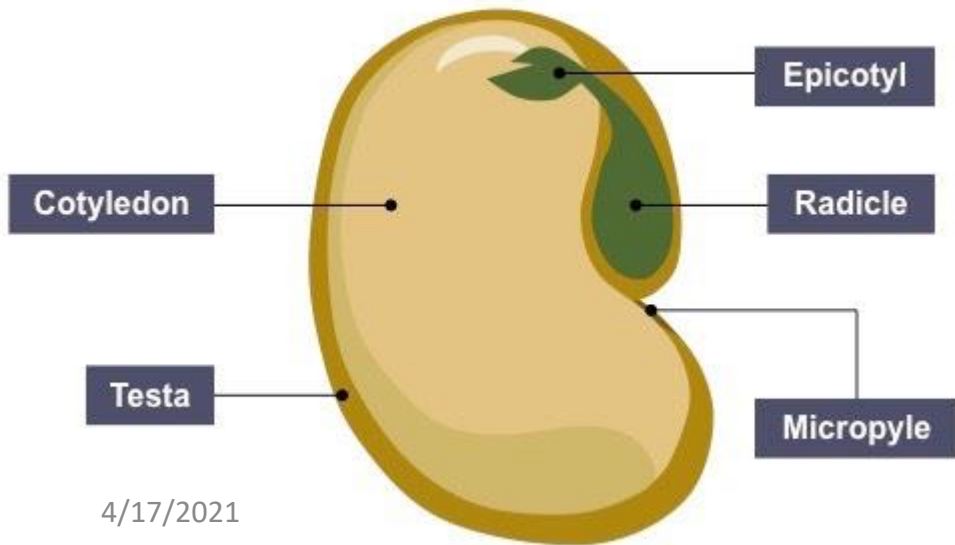


Figure 5.4 (a) Hypogeal germination in *Vicia faba* (broad bean). (b) Broad bean on left, French bean on right. (c) Epigeal germination in *Phaseolus vulgaris* (French bean)

Juvenile

- Juvenile: vegetative growth,
 - non productive,
 - Growth habit, (Hedra helix grow horizontally while adult growth is vertical).
 - Shape of leaf differ than adult, (Juvenile leaves of Hedra are more lobbed than adult, (Eucalyptus gunnii),
- Leaf retention (Fagus sylvatica)
- rooting success,
- pest and disease resistance,
- pruning coppicing (multi stem) and pollarding (single stem)



Eucalyptus gunnii



Adult growth

- Adult growth

- The adult stage is defined as the ability of plant to reproduce sexually and produce flowers, fruits and seeds

- Become adult after a certain number of leaves are produced or when it has reached a certain size

- Need environmental conditions

Senescence and death

- Annuals
- Pigment give autumn color :absorb light and reflect certain wave length of light determine the color of the pigment



Pruning saw Pruning saw



Gardenn shear



Two-bladed secateurs



Pruning knife



Electric hedge trimmer



Long handle pruner

Tree and shrub care

Pruning in adult plant

- Heading back (ends of branches are removed)
 - Trimming (remove small amount of branch with shear or electric trimmer) **to maintain shape**
 - Pinching (remove small amount of branch nipping out with finger tips for small plants) **to make plants bushier**
 - Thinning (entire branches are removed back to main stem) **this make the tree or shrub larger and more open.**
 - Lopping removal of large branch from the trunk of the tree, ask for specialist

Guide to annual pruning

- Choose the right time

1- deciduous trees and shrubs (bloom before May) prune **after flowering**

2- deciduous trees and shrubs (bloom after May) prune **between January and March**

3- flowering cherries (prunus) **late summer**

4 broadleaf evergreen **May**

5- conifers **autumn**

Guide to annual pruning

- Cut out dead wood
- Cut out damaged and diseased
- Cut out overcrowded and weak wood
- Remove suckers
- cut out overgrowth branches
- Prune for floral display (roses)

- Mulching (wood pieces, stone) to keep soil moist
- Winter protection for newly planted shrubs and trees (plastic screen)
- Hoeing to remove weeds
- Feeding
- supporting (stake) training for climbers
- Watering (drip irrigation, sprinklers, bucket, hose)

Propagation

- Division (suckers)
- Layering (put part of the branch into the soil)
- Seed sowing
- Cutting (cut part of plant that include bud or leaf and plant it)

Use

- Specimen
- Ground cover
- Tub plants
- Rockery
- Shrub border
- Hedges and screen
- Wind break