Pruning & Propagation

Kimbriki Eco House & Garden

- Learn propagation & pruning techniques to use in your garden
- Understand the theory behind a variety of propagation techniques including seeds, cuttings, layering, division, budding and grafting.
- Use this theory to create more new plants in your garden or to share/swap with others.

Introduction

Plants Breathe (draw diagram from whiteboard)

Gases breathed above and below the soil.

Phases of Plant Growth (draw diagram from whiteboard)

1. Vegetative 2. Reproductive 3. Annual / Perennial

Plant Structure (draw diagram from whiteboard)

Nodes & internodes. Cambium theory. The Cambium is the silky tissue of Hormone carrying cells, in all flowering plants just below the fibrous bark/skin, running all the way around and along every stem. It is the only active growth stem tissue and the only part capable of producing new root & stem growth.

Today's workshop will relate to the ADAM principles.

Pruning

Why prune?

1. aesthetic reasons 2. practical reasons

The chief aims of pruning are

1. To keep the plant healthy by cutting away all dead, diseased, injured, or weak shoots as soon as possible
2. To regulate growth, either to restrict a plant to a certain space or shape, to keep it neat and shapely or to increase its vigour
3. To develop to the full, qualities such as form, foliage, flower, or fruit, for which the plant is being grown.
4. **Good SHARP secateurs** are vital for good pruning

Basic Principle

The removal of one part of a plant modifies the remaining growth in some way:

- Pruning the top of a plant will reduce some of the root mass
- Pruning of the roots will reduce some of the top growth
- Pruning off some branches will encourage new branches to grow

Where to Cut/Prune? (draw diagram from whiteboard)

- Always try to cut branches off just ABOVE a NODE
- Nodes are the bumps on stems where new stems appear
- Try to angle the pruning cut so that water will drain off the raw stem (reduces disease)
- Choose a node where the bud is heading in the direction of where you want to new growth

Propagation

The term PROPAGATION is used to explain the activity by which an individual organism reproduces, multiplies, and spreads itself, both in space & time.

In plants there are two basic types of propagation:

1. Sexual (flowers – seeds)
2. Asexual (vegetative / cloning)

It is of fundamental importance to realise that reproduction involving a sexual process (male combining with female - flowers - seeds) is capable of producing plants which differ from their parents, thus increasing genetic biodiversity Asexual/vegetative reproduction produces genetically identical individuals (clones). This can be used to advantage to ensure that plants retain exactly the same basic useful characteristics such as flavour & colour etc, but these 'clones' are all vulnerable to the same potential diseases, which creates a higher risk for mass death.

The types of Asexual propagation we will learn about today are

- softwood cuttings
- semi-softwood cuttings
- hardwood cuttings
- leaf cuttings
- root cuttings
- layering
- division
- budding
- grafting

Hormone powder or gel can assist with all cuttings.
Always label your cuttings.

Softwood Cuttings

- From young tender tips or new shoots (evergreen or deciduous – usually in spring)
- Cut pieces about 10cm long, with minimum 3 or 4 nodes
  (bottom cut square, just below a node – top cut sloped, just above a node)
- Remove most leaves from lower down
- Keep moist and humid
- Usually Strike within month or so

Semi-softwood Cuttings

- From firmer wood, more brown (usually evergreens later in summer)
- (evergreen or deciduous – usually in spring)
- Cut pieces about 15cm long, with minimum 3 - 4 nodes ('heel' cuttings are good -more Cambium tissue)
  (bottom cut square, just below a node – top cut sloped, just above a node)
- Remove most leaves from lower down
- Keep moist and humid
- Usually Strike within a couple of months

Hardwood Cuttings

- From previous years wood that will snap (usually in winter when dormant or slower growing)
- Pieces from 2metres long, to small stems with minimum 3 - 4 nodes
  (bottom cut square, just below a node – top cut sloped, just above a node)
- Often from deciduous with no leaves
- Keep moist
- Usually take several months to Strike

Leaf Cuttings

- Single fleshy leaves
- Place in damp sand/coco peat
- A fine cut through veins in back of leaf can help
- Leaf often slowly dies and supplies food for roots and new plant to grow
- Keep moist and humid
- Usually strike within month or so

Root Cuttings

- Single pieces of thick root

- Place flat in damp sand/coco peat
- Keep moist and humid
- Usually Strike within month or so

Layering

- Plant stays attached to parent until new roots form
- Pull branch down to ground. Expose cambium on 1 or 2 nodes
- Pin branch to soil with wire peg or stake. Cover with potting mix
- Can take 6-12 months to strike

Division

- Division means just that – Dividing clumps or runners which will then grow larger
- Divide clumps of bulbs, tubers, rhizomes
- Divide when plants are actively growing

Budding

- Method of propagating citrus, peaches, roses, etc. easier than grafting
- Usually done Nov & Feb when sap is running freely
- Can have two or more varieties on same tree. Must be SAME family.eg citrus
- Choose buds from base of new, but mature NODES
- Often used to join softer fruiting stock to tougher root stock
- The most important thing in budding is for the two cambium layers to make contact so that the 'blood supply' of the mother plant and the bud become joined
- See Jackie French "New Plants from Old" notes, for specific detail

Grafting

- Method of propagating citrus, peaches, roses, etc. Usually Nov & Feb when sap is running freely
- Can have two or more varieties on same tree. Must be SAME family.eg Citrus
- Choose grafting pieces (scions) from new, but mature growth
- Often used to join softer fruiting stock to tougher root stock
- The most important thing in Grafting is for the two Cambium layers to make contact so that the 'blood supply' of the root stock & the scion keeps flowing
- See Jackie French "New Plants from Old" notes, for specific detail

Seeds

- More species & cultivars of plants are raised from seed than by any other means of propagation
- Seeds are the product of sexual reproduction in plants (flowering & pollination)
- The pollen (male cells) are produced in the Anthers of the flower. These male cells make their way down through the female centre of the flower stigma, to unite with the female cells within the ovule to produce seeds
- Unlike cuttings, seed grown plants will not be exactly like their parents
- Most seeds remain viable (alive) for 12 months or much longer
- Choose the best plants for seed collection
- Store seed in cool, dry conditions
- A good seed raising mix is two parts sieved soil, one part sand, one part coco peat
- Plant small seeds shallow, bigger seeds deeper. To a depth about 3 times its size
- Bottom watering of seed trays works very well
- Build up the edible seed bank in your garden.
- Always label your seedlings

References:

FRENCH, Jackie (1991)
New Plants from Old - Simple, Natural, No-Cost Plant Propagation
Aird Books, Flemington, Victoria, Australia

HAMMETT, K.R.W. (1977)
Plant Propagation – A Practical guide for every Gardener
A.H & A.W. Reed, Sydney, NSW, Australia

Kimbriki Website
Check out our website for some good little videos on pruning, propagation, and other topics.
www.kimbriki.com (Eco House & Garden → Resources and Publications)

For more information
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