

Penang Sangam High School
P.O. Box 44, Rakiraki
Year 12 Agriculture Lesson Notes Week 13

Strand	AS 12.3 Agronomy
Sub-Strand	AS 12.3.2.3: Ornamental Horticulture
Content Learning Outcome	Deliberate on Ornamental Horticulture by investigating, selecting and practicing appropriate husbandry methods on selected ornamental plants.

Lesson 13: Care of Pot Plants

Lesson Outcome: At the end of this lesson the student will discuss and practice some care for potted plants.

Potted plants may be placed outdoors, grown in plant raising structures like shade houses or grown indoors.

To keep the plants vibrant, care is given to the plant. Some methods include:

1. **Light control** - each plant has its own lighting requirements. Plants which require:

- ✓ full light should be placed outdoors
- ✓ longer hours of light be provided with artificial light
- ✓ less intense light be planted and raised indoors or in suitable shade

2. **Water control** - each plant has its own water and humidity requirements.

The general rule is:

- ✓ irrigate potted plants early in the morning
- ✓ apply water to soil as water damages flowers and encourages pathogens to develop on leaves
- ✓ water pot plants from base to discourage leaching

Plants which require:

Moist soil - use more water absorbent material, like sphagnum peat moss and coir, in the potting mix to maintain water holding capacity of growing medium. Irrigate when soil surface is dry.

2017 – State one advantage of using coir as an ingredient in the potting mixture for hibiscus plants. (1 mark)

Dry soil - place more water draining material, like vermiculite and perlite, in the pot to encourage the draining of water and aeration of soil.

Methods used to irrigate pot plants include:

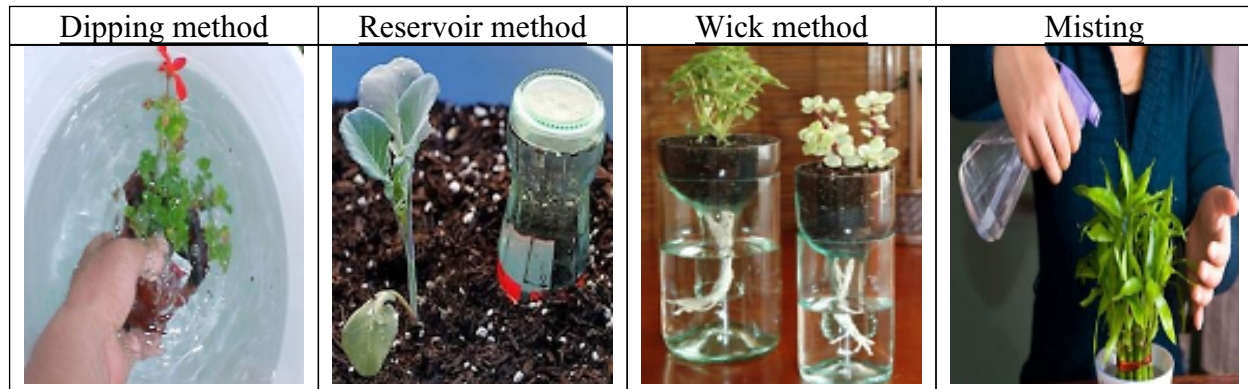
(i) Dipping method – pot plant is submerged in a bucket containing water. When there are no more bubbles, the pot is taken out and left to drain naturally. Suitable for the weekly watering of succulents

(ii) Reservoir method – small container with a hole in the bottom, is buried in the center of container, level with soil. It is filled with water every day or two, and has the effect of watering from the bottom of container.

(iii) Wick watering method – two pots are used. The first pot is partially filled with water. The second pot which contains the pot plant has a hole in the bottom, through which wicks hang. When the second pot is sat in the top of the first container, the wicks transfer water from container 1 to container 2 according to the needs of the plant.

(iv) Misting method – where water is sprayed onto foliage and surroundings of plant.

**2017 -
Diagram**



3. **Fertilizer Application** - houseplant fertilizers come in a number of formulations including:

- ✓ wettable powders and concentrated liquids that are diluted with water then applied to the potted plant
- ✓ coated pellets and spikes are time release fertilizers which are applied to potting soil
- ✓ premixed fertilizers are applied directly to the potting soil

As a general rule, foliage houseplants appreciate fertilizers high in nitrogen while flowering plants respond best to those with higher phosphorus content.

Excess nutrients in the potting soil will desiccate or burn tender roots. High concentrations of nutrient salts also prevent the plant from taking up water so wilting is observed.

Signs that a pot plant has been over fertilized include:

- ✓ browning roots and leaf tips
- ✓ wilting because tender roots are burnt by excess nutrients
- ✓ poorly shaped leaves
- ✓ white crust on pot rims

2019 – Describe one symptom which appears when a potted plant has been over fertilized. (1 mark)

If signs of excess nutrients are seen:

- ✓ add a lot of water to potting medium to leach nutrients
- ✓ repot the plant and replace old mixture with fresh medium

4. **Weed control** - weeds compete with and often kill pot plants so the following methods are used to prevent and control weed infestations.

(i) Sanitation - fresh potting mixes must be free from parts of weeds like seeds and stolons. The environment in which the pot plant is kept is also kept free of weeds which can contaminate the pots.

(ii) Chemical barrier - pre-emergent herbicides are sprayed on the surface of the pot plants to stop weeds from germinating

(iii) Hand pulling - any germinating weed is removed from the pot.

5. **Pest Control**

Pot plants suffer from an array of pests including:

- (i) Insects like white fly, aphids, spider mites, mealy bugs - control using insect soup or traps
- (ii) Molluscs like snails and slugs – use beer bait
- (iii) Worms - fumigate soil before potting

6. **Pruning** - pot plants sometimes outgrow the pot in which they are growing and need to be pruned.

7. **Re-potting** - a plant needs repotting when it becomes rootbound because its ability to take up water and nutrients is impaired. This usually results in poor vigor and overall health.

Root bound - roots begin to become crowded or grow out of the bottom of the container

Steps in Repotting

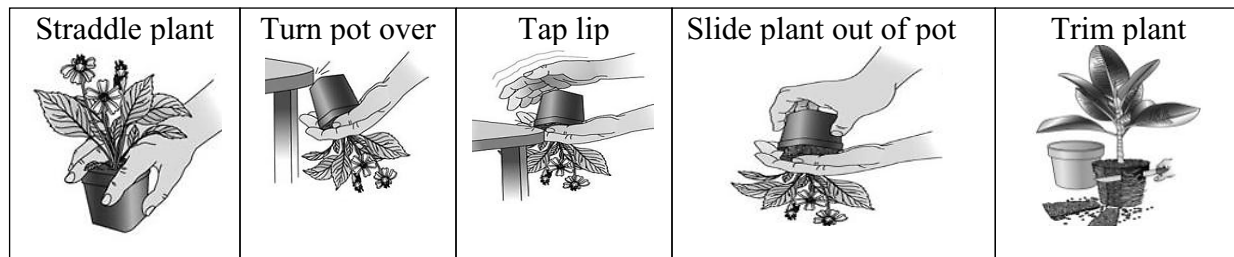
(a) New pot

- (i) Select a new pot which is free from used soil, salt residues and other organic matter. The pot's size, color, and material should complement the size of the plant, leaf texture and leaf and flower color.
- (ii) Disinfect container by soaking in solution of 1 part bleach to 9 parts water for 15 minutes

(b) Potting mix - prepare the potting mix that suits the plant

- (c) Remove the plant from the original pot
 (i) wet the soil thoroughly to soften it and allow plants to rehydrate
 (ii) place hand over the media, straddling the plant between fore and middle fingers
 (iii) turn the pot over and tap the lip against a hard surface until the plant slips out

2018 – In three clear steps, discuss how an established plant is removed from a pot. (3 marks)



- (d) Trim the plant - remove excess roots, dead and diseased vegetative parts as well as daughter plants like suckers
 (e) Place material for soil drainage/water retention in the bottom of the pot
 (f) Place a layer of potting mix into the pot
 (g) Position the root ball so that the soil surface will be the same level as the original pot
 (h) Fill in the sides with potting mix while lightly firming the soil
 (i) Mulch the surface of the potting mix and water thoroughly

2020: Essay – With reference to maintaining pot plants, discuss three methods of:

- ✓ **Irrigation** (3 marks)
- ✓ **Fertilizing material application** (3 marks)
- ✓ **Weed control** (3 marks)