3.02 Understand nursery production and marketing techniques.

Notes

A. Nursery Production.

1. Types of plants for container, PNP and traditional field growing (balled and burlapped B&B, bare root).

1. Trees- container, PNP, B&B, bareroot.
2. Shrubs- container, PNP, B&B.
3. Perennials- container, PNP.

2. Propagation.

1. Sexual (seed).

1) Stratification- chilling seeds to simulate winter conditions before germination. Examples: baptisia and daylily.

2) Scarification- breaking of the seed coat. Examples: redbud and maples.

1. Asexual.

1) Cuttings.

a) Softwood (herbaceous) cutting- leaf, pieces of the stem or roots from non-woody plants. Cuttings are taken late spring through early summer.

b) Hardwood cutting- pieces of stem from woody plants.

Cuttings are taken fall through winter.

2) Grafting- joining separate plant parts together to form a union and grow.

a) Scion- top portion of the graft.

b) Rootstock- root or bottom portion of the graft.

3) Budding- a form of grafting when a bud is used instead of a scion.

4) Layering- forcing roots to grow on the stem of the plant while it is still attached to the parent plant.

3. Soil for containers.

1. Media must be porous.
2. Soilless media:

1) Peat.

a) Partially decomposed material mined from swamps. b) Good moisture holding capacity.

2) Perlite.

a) Natural volcanic material that helps aerate the soil. b) Good moisture holding capacity.

3) Vermiculite.

a) Mica mineral matter used to start cuttings. b) Neutral pH.

c) Good moisture holding capacity.

4) Bark.

a) Ground pine or oak bark.

b) Increases the porosity of a soil.

5) Amendments.

a) Lime- calcium and magnesium increased the pH level of soil making it alkaline or “sweet” correcting the acidity of the soil.

b) Fertilizer- adds macro and micro nutrients to the soil. c) Wetting agents- increases water retention of the soil.

4. Soil for planting in the ground.

1. Use native soil in tradition field planting.
2. Tree and shrub roots need to grow in native soil.
3. A soil test should be used to determine if soil amendments are needed.
4. Soil amendment functions.

1) Increase water and nutrient holding capacity.

2) Improve aeration and water infiltration.

1. Soil amendment should be mixed with the natural soil.

f. Organic- “fresh” organic material should be first composted.

1) Sphagnum peat.

a) Dehydrated remains of acid bog plants. b) Holds moisture and are high in acidity.

2) Grass clippings- add nutrients to the soil.

3) Saw dust- high carbon to nitrogen ratio, can make nitrogen unavailable to plants.

4) Compost- decayed organic matter, good fertilizer and soil conditioner.

5) Manure- adds nutrients to the soil, good moisture holding capacity.

g. Inorganic.

1) Vermiculite- good moisture holding capacity.

2) Perlite- good for aerating the soil.

3) Pea gravel- good for heavy clay soil.

5. Planting.

1. Containers.

1) Place one plant in the center of the container.

2) Evenly space plants in the container if more than one plant is

used.

3) Planting depth is important and varies depending on plant

material.

1. Field.

1) Determine the layout and spacing of trees and shrubs in the field.

2) Determine the equipment needs of field grown plants.

6. Water.

1. Container and PNP.

1) Watering is more important for container grown plants than field grown plants because roots can go no deeper or spread any wider than the container.

2) It is best to water container plants in the morning for maximum absorption, however, some may need to be watered more than once a day depending on the weather.

3) Container plants should be watered until the water runs through the holes in the bottom of the pot.

4) A gallon container needs about a pint of water at each watering.

5) Container plants require more water in dry, hot, windy weather.

6) Container plants need more water when actively growing and

flowering.

7) Do not allow any container plants to dry out.

1. Field grown.

1) Field grown plants should be watered in the morning for maximum absorption.

2) A more porous soil needs more water than a clayey soil.

3) Watering for field production depends on the weather.

4) Field grown plants require more water in dry, hot, windy weather.

5) Field grown plants need more water when actively growing and flowering.

6) Do not allow any field grown plants to dry out.

7. Fertilizing.

1. A fertilizer schedule should be established for each type of plant grown.
2. Scheduled periodic liquid fertilizing should be established depending on

plants, soil, size, etc.

1. Slow release fertilizers such as Osmocote and Magamp are mixed into the potting media or top dressed on the soil surface.
2. Plants in containers for more than one year require additional fertilizer and should be watered thoroughly after fertilizing (varies on pot size and plant material).
3. Plants should be observed and fertilization changed as plant foliage shows a need for either more or less fertilizer. Tissue analysis can be done to determine deficiencies.