

CUTTING PROPAGATION FOR THE HOME GARDENER



PDF of Presentation

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Password = rainfall

The Plan

- 1) Lecture cutting propagation
- 2) Overview of a simple home propagation system.



So What is Plant Propagation?



The Art and Science of Making More Plants

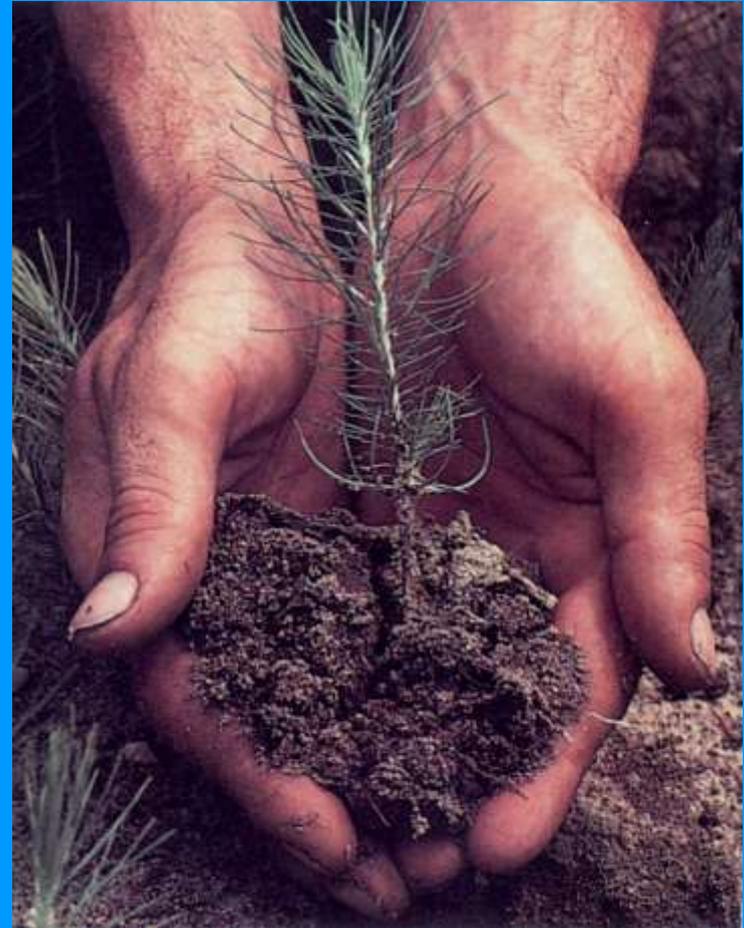


Not An Exact Science



Who is a Plant Propagator?

A person who masters the art, knowledge and technical skills needed to propagate plants.



Propagators Are Everywhere

- **Amateurs/Hobbyists**
- **Nonprofit Organizations**
- **Arboreta and Botanic Gardens**
- **Colleges and Universities**
- **Germplasm Repositories**
- **Retail and Wholesale Nurseries**
- **Tissue Culture Labs**
- **Seed Producers**

Cutting Propagation

- Fascinating and frustrating.
- Attention to detail.
- Understanding of factors that influence root development.
- Willingness to attempt the unlikely.
- Old fashioned luck.

Why Cuttings?



True to type clones



Parent Plant = Cutting





Uniformity of Crop



UNIFORMITY

It's not for everyone







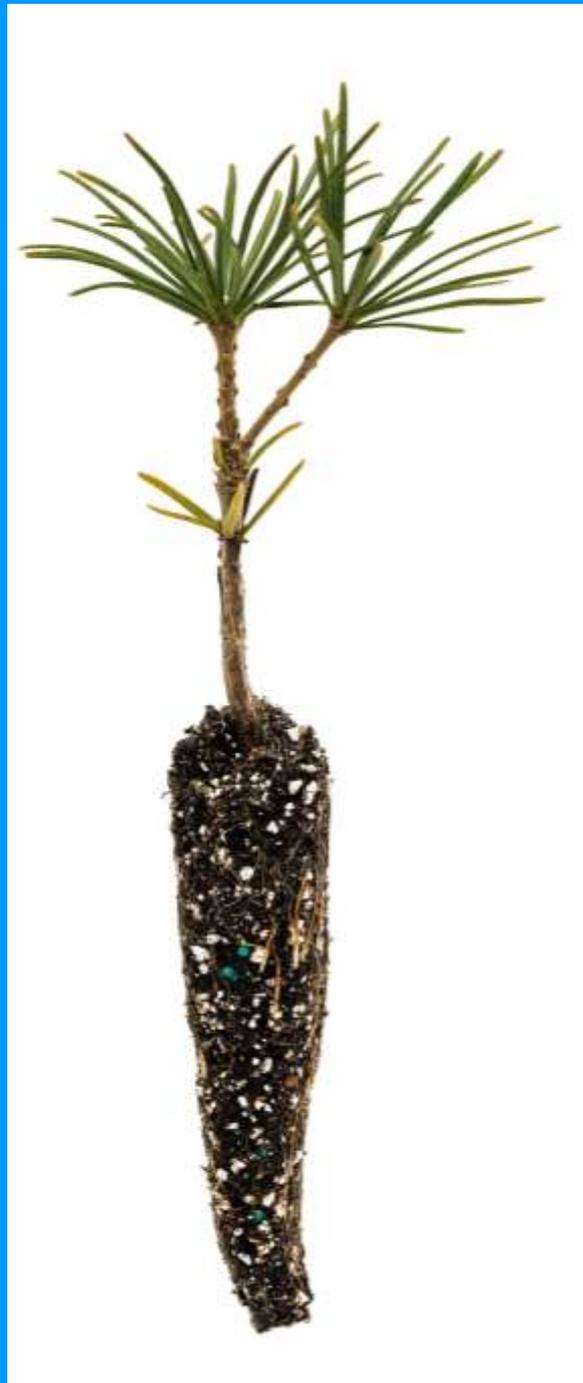


Bailey's

Efficient







Method of Producing Plants That Don't Produce Seed

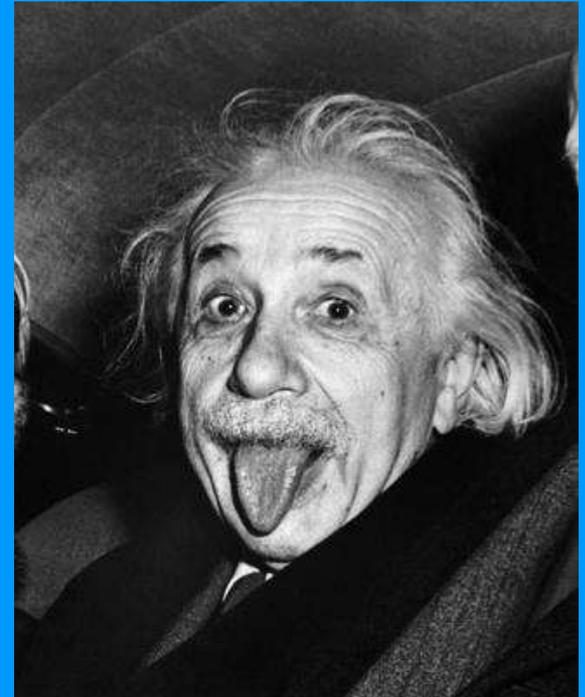


Saving Some Cash



Developing a Formula

- Each Plant Has its own “Formula” to be propagated successfully from cuttings.
- The role of the propagator is to determine the variables in the equation.
- Dependent on
 - genetics of plant
 - environment
 - propagator



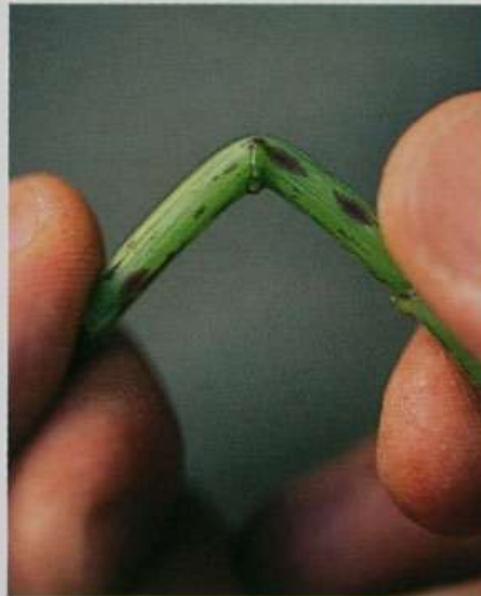
Type of Cutting – Growth Stage

- **Softwood**
- **Greenwood**
- **Hardwood**



Softwood Cuttings

- **Soft, succulent growth**
- **Collected during active growth**
- **Prone to disease and water stress**
- **Tropicals, some shrubs and perennials**





Coleus



Sedum

Greenwood Cuttings

- Firm growth
- Also called Semi-Hardwood
- Collected after active growth
- Deciduous trees/shrubs







Winterberry Holly

Beauty Berry

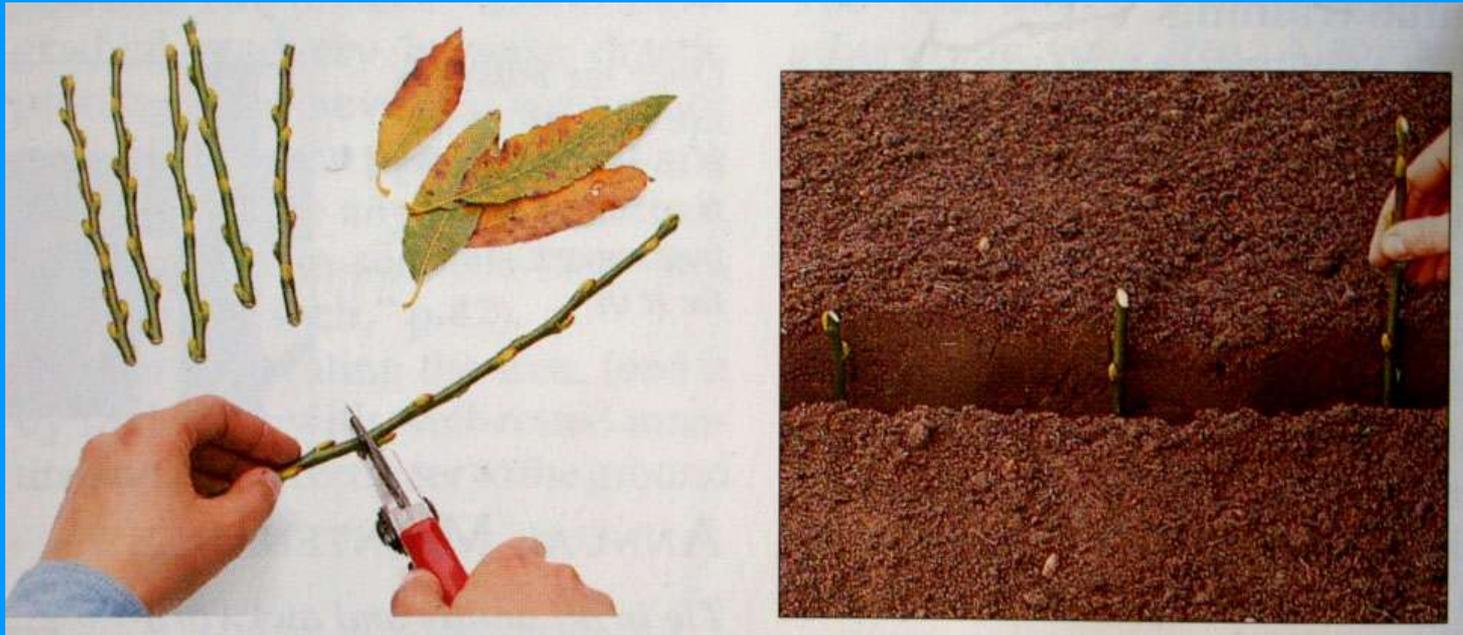


shrub dogwood



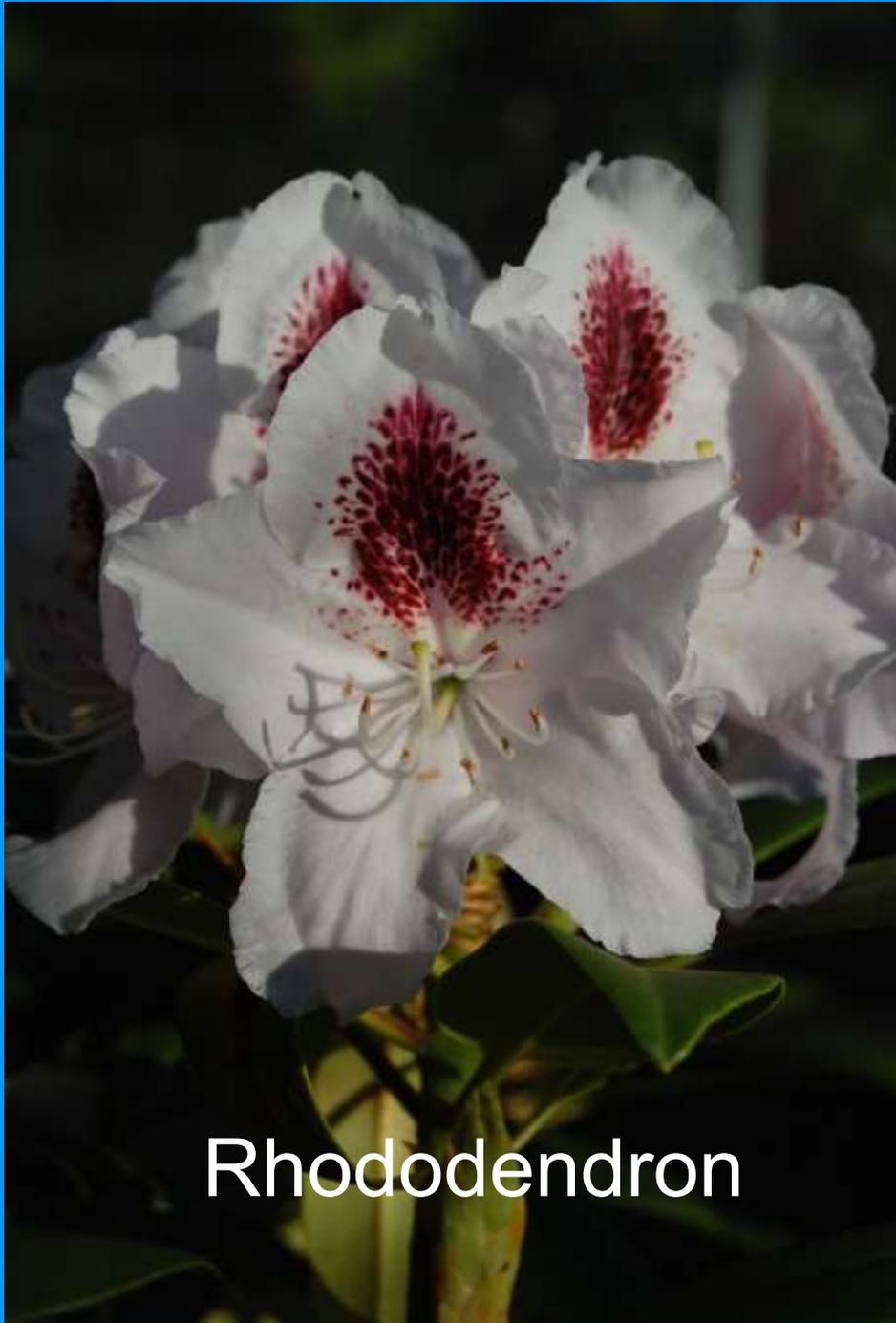
Hardwood Cuttings

- **Mature stems**
- **Collected late in season or in winter**
- **Resist disease and water stress**
- **Evergreens, some deciduous plants**



Boxwood





Rhododendron





Mountain Laurel





Hinoki Cypress

Type of Cutting – Tissue

- **Stem Cuttings**
- **Leaf-Bud Cuttings**
- **Leaf Cuttings**
- **Root Cuttings**



Stem Cuttings

- Stem Tissue with multiple viable buds
- The most common type of tissue used



Leaf-Bud Cuttings

- A single bud and associated leaf



Leaf Cuttings

- A leaf or portion of a leaf without bud tissue



Root Cuttings

- A portion of the root system of a plant



Collecting and Handling

- **Morning or evening**
- **Maintain moisture**
- **More critical for soft succulent cuttings**



A Battle Against Water Loss





Nutrition/Health of Stock



Flower Buds vs. Veg. Buds



Collecting and Handling

- Labels
- Process Quickly
- Pencil



Storage of Cuttings

- **Some cuttings can be stored for an extended period of time (up to 10 weeks)**
- **Important to maintain moisture status**
- **40-47F is ideal temps**
- **Disease control/Air circulation**

Develop a Phenology Calendar

- **Plant life cycle events and how they are influenced by variations in climate**
- **Stage of plant growth**
- **Stage of other plants in close proximity**

Other Factors That Influence Root Development

- **Temperature**
- **Media**
- **Humidity**
- **Hormones**
- **Wounding**



Temperature

- Optimum temperatures between 65 and 80 F for most cuttings.
- Lower temps OK for hardwood cuttings.



Media

**Balance of moisture holding components
and drainage components**



Moisture Holding

- Peat Moss, Vermiculite



Drainage

- Sand, Perlite



Starting Point

1:1 Peat:Perlite





Humidity



A battle against water loss

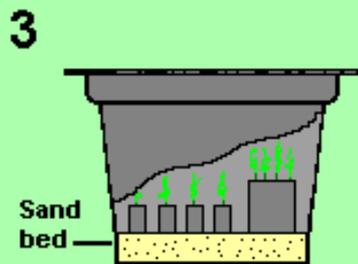
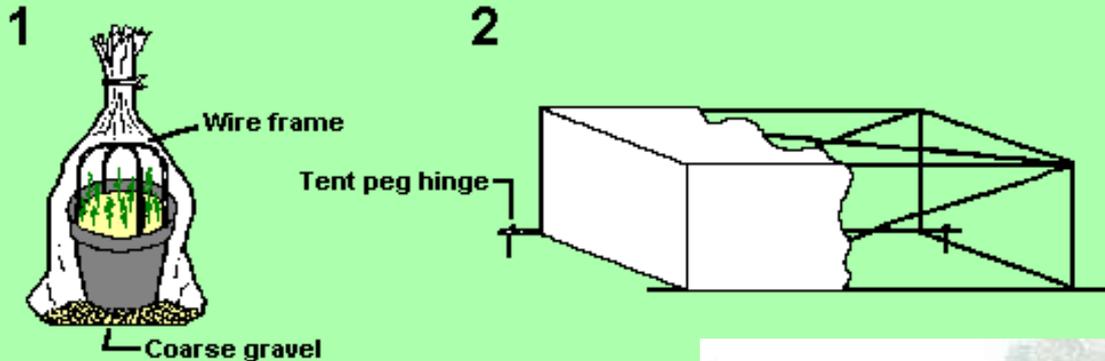
Mist



Fog



Humidity Tent



- 1. Pot enclosed in wire frame
- 2. Home made frame with tent peg hinge
- 3. Shrub tub covered with plastic

HUMIDITY
FOR C









Hormones

- Numerous forms available
- Contain varied levels of Auxin





EXTREME Concentration

2000 Gallon DROP-A-GAL

WORLD'S FAIR Gold Medal

HORMS #4

SUPERthrive

50 IN ONE

The Original VITAMINS-HORMONES Solution

SINCE 1940, \$5000 GUARANTEED to be World CHAMPION

ACTIVATOR TRANS / EXTRA REVIVER, PLANTER, GROWER - PERFECTER!

ROOTS • GROWTH • LEAVES • TRANSPLANT LIFE LIFE



WITH Without • WITH Without • WITH Without • WITH Without

GUARANTEED to REVIVER, PLANTER, GROWER, PERFECTER!
Money & Carbon: Instant Refund!

NO Add to FERTILIZING for growing
DOUBLE-MONEY-BACK GUARANTEE

4 FL. OZ.

WORLD'S FAIR Gold Medal
HELPED WIN ONLY SCIENCE & INDUSTRY GOLD MEDAL AWARDED AT ANY WORLD'S FAIR
Always for seeds and etc.

EXTREME Concentration

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WORLD'S FAIR
Gold Medal



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WITH Without • WITH Without • WITH Without • WITH Without
Carnations Tomatoes Hibiscus Bougainvillea

GUARANTEED as Advertised in
Better Homes & Gardens
House & Garden House Beautiful

DOUBLE-MONEY-BACK GUARANTEE

HOW TO ADD TO FERTILIZING FOR GROWING

4 FL. OZ.

Drop-A-Gal



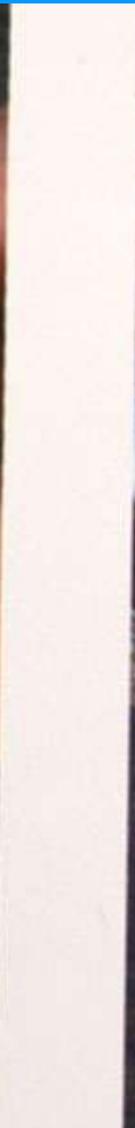
HELPED WIN
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WORLD'S FAIR

Always
decades
ahead.

Wounding

- Eliminates barrier (bark) to root growth
- Greater surface area for hormone uptake
- Induces internal hormone changes
- Most important for hardwood cuttings





Preparation of Stem Cuttings

- **Proper length (2-8")**
- **Cut below a node (bud)**
- **Consider removal of growing tip**
- **Reduction of foliage**
- **Consider wounding**







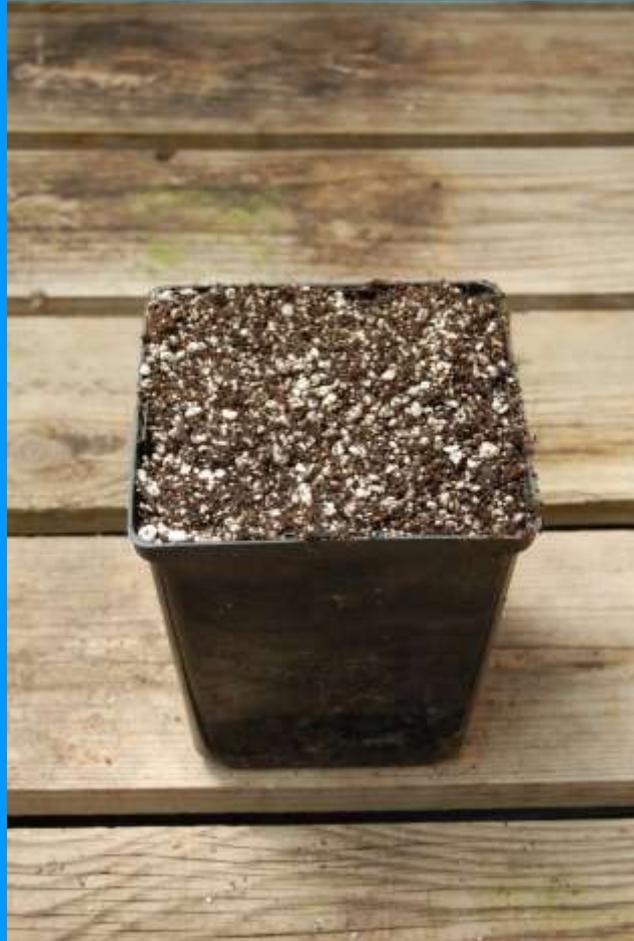




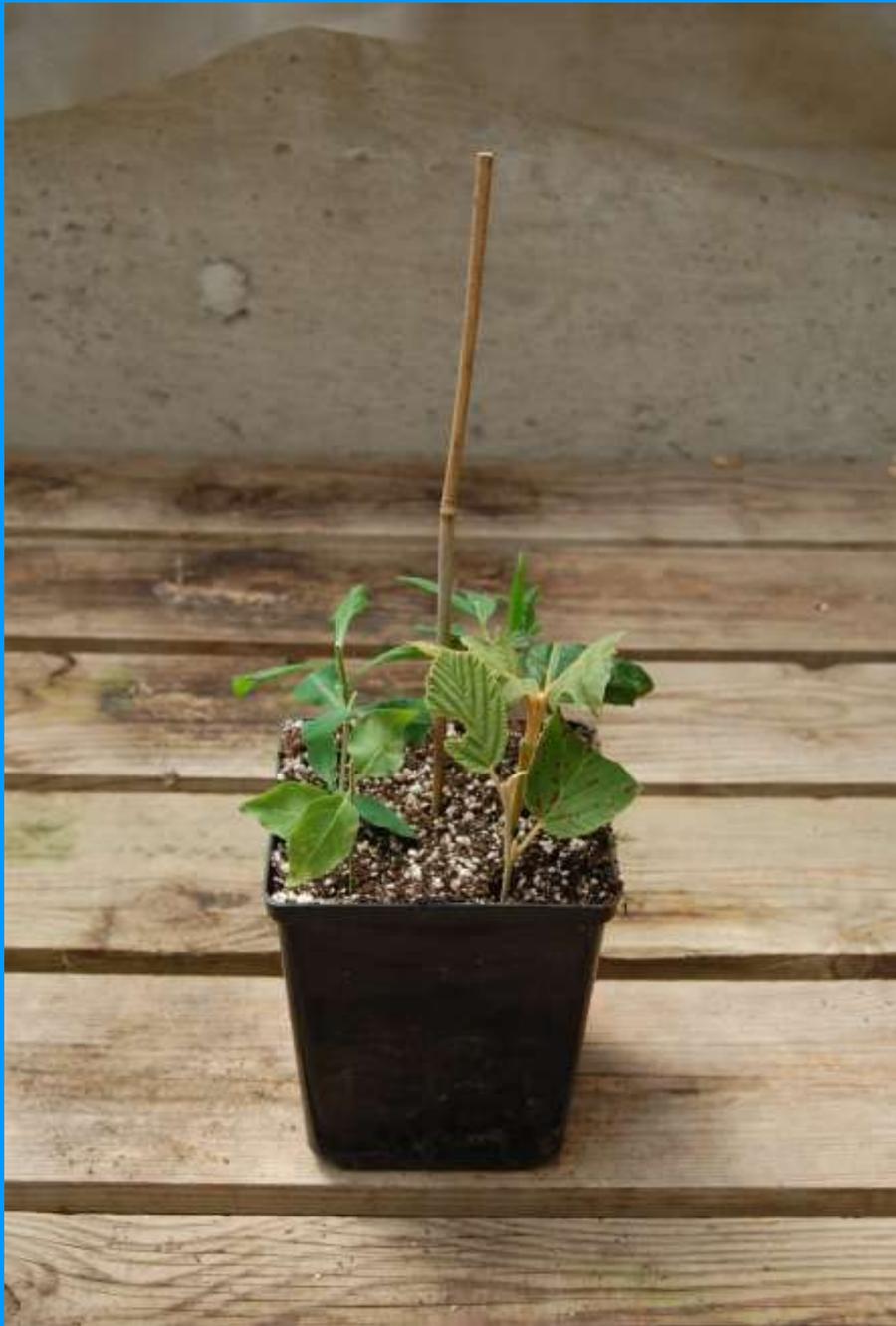




Constructing A Simple Propagation System









East or West Facing Window







If All Goes as Planned



Aftercare - Hardening Off

- The process of gradually acclimating rooted cuttings from high humidity to reduced humidity**
- Gradually reduce humidity over several days to weeks**
- Finally, remove from humid environment, pot up and keep in an area out of excessive sun and wind**



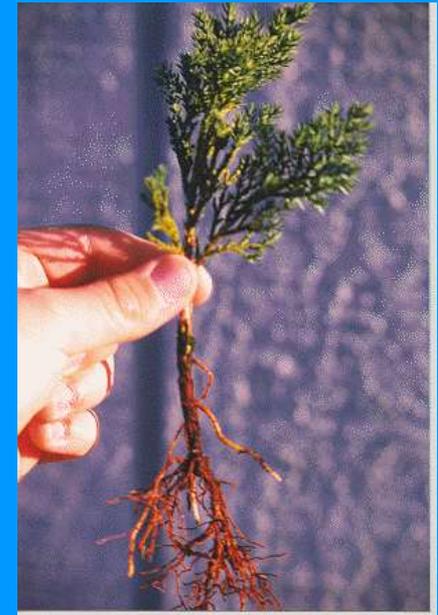




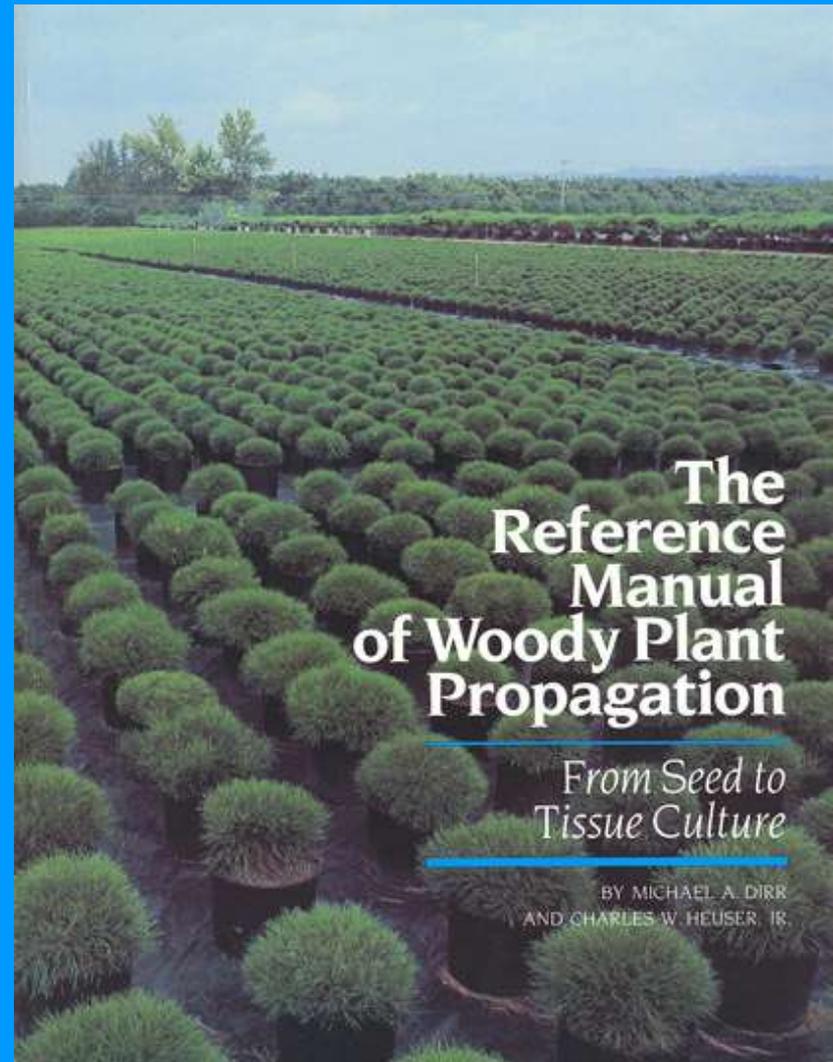
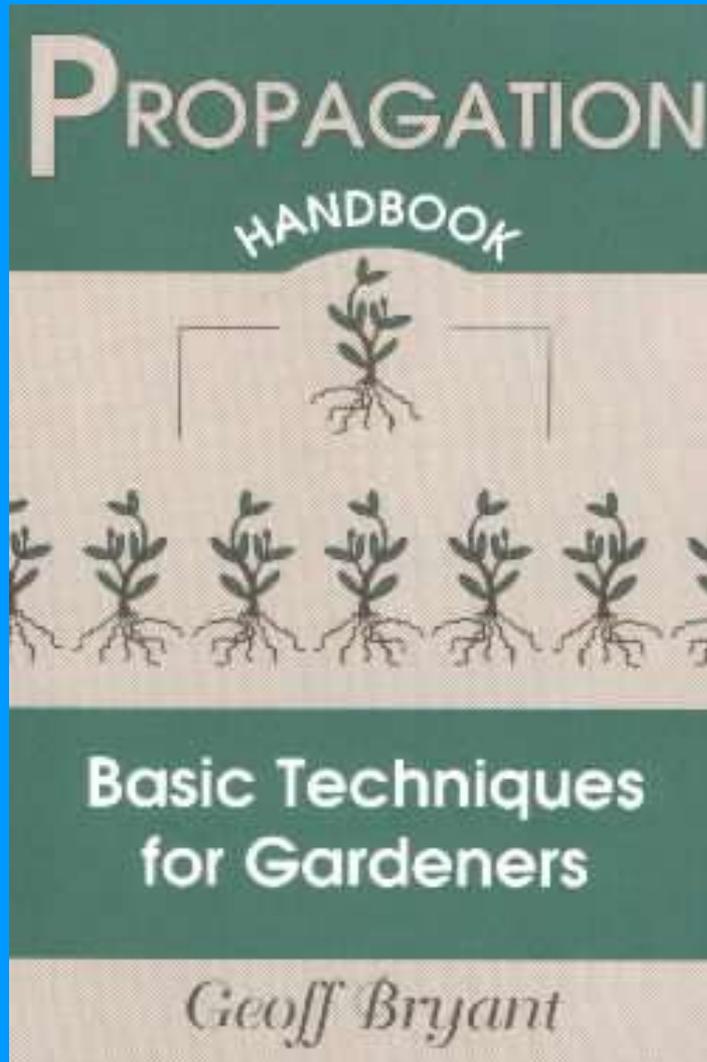
Handwritten label for the first plant, containing several lines of text.

Handwritten label for the second plant, containing several lines of text.

Handwritten label for the third plant, containing several lines of text.



Resources



Questions?



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