

## Plant Propagation

### Seed Starting, Divisions, Cuttings & Layering



- Easy Ways to Make More Plants

## Seed Starting HGIC 1259 Seed Starting Indoors

### When to Start:

- Package instructions-helpful. Research provides additional tips.
- Vegetables etc. *for AMGA Plant sale*: start between Feb.15 & March 1.
- Hardy perennials & spring blooming biennial seeds – Start summer or early fall prior & overwinter in protected area.

### Pre treating seeds-To replicate what happens in Nature:

**Stratification:** Chilling seeds in the refrigerator = Cool winter

**Scarification:** Breaking/weakening seed coat = Passing through a bird or animal - water soak, sandpaper, or “nick” the seed coat.

### ➔ AMGA Sale-These seed started plants are hard to sell:

- Late starts = small plants
- Cool weather veggies and annuals.
- Plants that are “direct sow”

Do try some unusual seeds/plants.



## More Seed Starting Tips

1. Label and keep records.
  2. Choose a soil mix with small particles light and offers good drainage.
  3. Use clean, wide, flat containers to avoid crowding & disease. Transplant after first true leaves appear.
  4. Tamp down soil for good seed contact.
  5. Cover container with plastic wrap to keep moisture even.
  6. Keep planted seeds at required germination temperature.
  7. Remove wrap when seedlings emerge. There should be good air flow to help prevent disease/damping off.
  8. Give seedlings LIGHT - supplement with fluorescents.
  9. Gradually acclimate seedlings to natural light conditions, outdoor temperatures = “hardening off”
- Saved/collected seed – Remember that hybrid and cross pollinated seeds will (probably) not be identical to parent plant.



## Perennial Division HGIC 1150-Dividing Perennials

**Suggested:** Fall blooming plants-*divide in early spring*; Spring blooming plants-*divide in the fall*.

For many plants-dig the whole clump and divide. Some perennials may be divided by digging “off sets” or runners from the ground. Water and divide in mild weather & give extra care until established.

For Plant Sale – Give divisions time to establish in the pot. This will limit transplant shock and allow additional root growth for a successful planting.

To overwinter hardy potted divisions, group together and place in a protected spot in your landscape.



bobvilla.com



greennersdoitright.com

## Propagation - Cuttings and Layering Vegetative Propagation

Basic information about:

- Cuttings from Annuals, Perennials & Woody Ornamentals
- Dormant Cuttings
- Simple (Ground) Layering
- Air Layering
- Water Propagation



## Cuttings-Non Woody Plants - Perennials and Annuals



From Plant Tip Cuttings  
(or on down the stem)



Some Plants May be  
Started from Leaves or  
Parts of Leaves

## Some Basic Supplies for Propagating Cuttings:

- Preferred Rooting Medium - Sand, Perlite, Vermiculite, (+Peat/Compost) well drained Potting Mix or some combination of any of the above
  - Clippers, sharp scissors or small, sharp knife
  - Rooting Hormone-Powder or Liquid
  - Plant Rooting Container-with good drainage
  - Small Cup-to hold powdered hormone
  - Pencil or Dowel
  - Water
- *Humid, Low light area for cuttings to take root and put on early growth.*



## Some Tips for All Cuttings

Create a “greenhouse” if humidity is low or for protection from wind.



A few extra (leaf) nodes on a cutting may help create more root growth.

When is the Best time to start a cutting? Check a reputable website or book for more information on a particular plant.



### Starting Annuals or Perennials From Stem Tip Cuttings (Begonia)

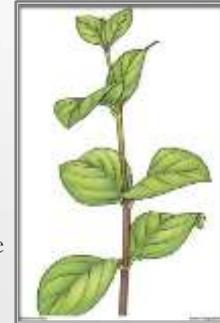


North Begonia Soc. UK

- Gather materials and take cuttings
- Make a sharp cut below leaf node
- Remove lower leaves and any flowers
- Make a hole in propagation mix
- Place rooting hormone in a container
- Dip cutting stem (wet end) into rooting hormone
- Add more cuttings, then water container
- Place in low light, keep soil from drying, protect from wind.
- *To Increase Humidity*- use a plastic bag supported by dowels or a bell jar.
- Periodically check for root growth-give cutting a gentle "tug"
- Pot individually after roots develop.

### Taking Cuttings from Woody Ornamentals

Parts other than the green stem end may be used for cuttings. *The type of plant and cutting time will determine the part to use and propagation method.*



- **Soft Wood**-End of branch, flexible
  - **Semi Ripe/Semi Hard Wood**- Snaps, but not woody in appearance
  - **Hard Wood**- Woody, bark covered
- Tip: Propagate comparatively "healthy" sized stem cuttings from a plant, usually not much larger than the diameter of a pencil.

### Cuttings - Woody Plants Tip cutting-Hydrangea

Similar steps as with cuttings of non-woody ornamentals



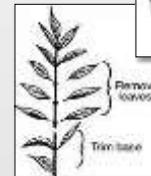
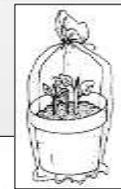
Rooting hormone is helpful, though hydrangeas and other easy to root ornamentals may not always require it during the summer. Root in humid, windless, lower light conditions. Keep soil evenly moist.

Photos - Hydrangeashydrangeas.com

### Try Growing Cuttings from some of these Favorite Woody Plants

Research the best type of wood/time of year

- |                |                |                     |
|----------------|----------------|---------------------|
| Azaleas        | Magnolias      | Virginia Sweetspire |
| Beautyberry    | Mock Orange    | Weigela             |
| Butterfly Bush | Roses          | Willows             |
| Crape Myrtle   | Rose of Sharon | Winter Hazel        |
| Cypress        | Pittosporum    | Witch Hazel         |
| Daphne         | Pyracantha     | Yews                |
| Deutzia        | Serviceberry   |                     |
| Forsythia      | Smoke Tree     |                     |
| Fringe Tree    | Spireas        |                     |
| Hibiscus       | Summersweet    |                     |
| Hollies        | Sweet shrub    |                     |
| Honeysuckle    | Viburnums      |                     |



Partial List from NC State Extension

**DORMANT CUTTINGS:**

**Rooting Hardwood Cuttings during Fall & Winter**



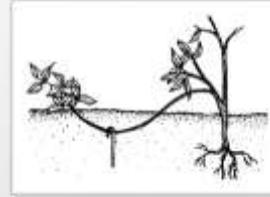
\*Dormant cuttings may require a covering due to lower humidity: a supported plastic bag, cold frame, bell jar, etc. Protect from coldest weather. *Transplants best if grown in the container for a year.*

**Ground Layering-Woody Ornamentals**

*Start This When Plant Is Putting on Growth. Secure leaf nodes below the ground.*

One New Plant-  
Simple Layering

Or More! -  
Compound Layering



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*Tips- Use a "Pin", Brick or Stone & Keep a record!  
Add amendment or compost to poor soil at layer point.*

**Air Layering  
Woody Plants**

← More Woody Stem (ex. camellias)  
Less Woody Stem →  
(ex. houseplants)



**Outdoor Plants-Start layer in early spring for root system to develop by fall – remove and pot in container. For best results: *Transplants in landscape best if grown in a container for a year.***

**Will it Grow Roots in Water?**

Shown below are just a few plants that may be started in water. Once the plant develops a decent root system, carefully transplant into a good potting mix.



Hardy papyrus will root upside down in water.



Try water propagation with plants in the Lamiaceae family (coleus, mints, salvias, basil, monarda, agastache).



Root Angels' Trumpet (Brugmansia) in water over winter.

*Check reliable sources on the web for more types of plants that may root in water.*

## Fact or Folklore? Propagation Tricks and Techniques



**Potatoes**-No studies, but lots of history and anecdotal evidence on the web.



**Colored Glass**- Probably used more for aesthetics. Blue and green light may actually slow root growth. (Ohio State)



**Honey Dip**-Does not contain any rooting hormone, **but** may contribute antiseptic & antifungal properties.



**Willow Stem Tea**- Salicylic acid inhibits the formation of ethylene which inhibits root growth. (Garden Professors)

L-R: Garden Diva, All Things Plants, Gardening Know How, Mr. Brown Thumb

## Making More Plants for AMGA Plant Sale

**Other Ways to donate-**

→ **Dig up "Volunteers"** from your yard. Learn to identify seedlings and give these time to develop a root system in a container.



→ **Purchase Multi Packs and Repot Individually**- Do this by the end of March. Purchase tomatoes, veggies; coleus or other interesting annuals/multi packs.

**LABELS** -Use simple ID labels from the start so there is no confusion.

More detailed labels for the AMGA Sale:

- Master Gardeners - RESEARCH and EDUCATE - give details on your sale labels.
- **Include: Name-Common and Botanical (non patent), Light and Water needs, Mature Size, Bloom Color and other Helpful Information** (unique characteristics, toxicity, reseeding, spreading, etc.)
- For Labels: Use Printer/Avery labels on the pot or on a "stick" (protect with tape if done early on). OR Cut vinyl mini blinds and hand print label in pencil.

**CONTAINERS/pots:**

- A minimum 4 inch pot or **larger** is best. Fill all sized pots with healthy plants.
- Last resort - Use food & drink containers, buckets or other clean, recycled plastic.
- Peat pots are great, but if these begin to decompose, reinforce with plastic wrap/tape.

**SOIL/PLANTING MIX** - Purchase **or** Mix a light, well draining growing medium.

### SOURCES:

- Clemson HGICs: 1259 - *Starting Seeds Indoors*; 1150 - *Dividing Perennials*
- Betty Crowther's Lunchbox Handout- From Better Homes and Gardens-*Seed Starting Essentials*
- *Plant Propagation by Layering*-NC State Extension Service
- *Air Layering For Difficult to Root Plants*-Texas Agri-Life Extension
- *All About Starting Seeds; Propagate your Shrubs from Softwood Cuttings* - Fine Gardening Magazine
- *Propagate Plants by Cuttings*-Missouri Botanical Center
- *Make New Plants with Hardwood Cuttings*-S. Cory Tanner, *SC Living*



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