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# Woody Shrub Production

For Cut Flowers

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# Today's Goals

## Quick Overview

- Learn the basics around growing woody shrubs
- Review growing techniques
- Identify proper harvest stages
- Learn about post harvest practices
- Identify places to purchase
- Propagation techniques

## Quick Note

- Not all inclusive
- Many new species on market

# Terminology & Keys to Success

- Right Size
  - Container vs. Bare Root
- Water Access
  - Woody shrubs aren't as needy as annuals but will need extra water during establishment phase
- Weed Control
  - Fabric, mowing, weed eating, mulching - no one perfect solution
- Production-Growing
  - Spacing
  - Pruning
  - Pests and Disease



# Terminology & Keys to Success



- Coppicing and pollarding- Two dormant pruning methods that allows us to continually harvest woody stems while also keeping the plants healthy.
  - Coppice pruning- Pruning cuts are made at or near ground level when wood is dormant at some yearly interval. Dormant buds break, producing vigorous, juvenile growth. Coppice pruning is a repetitive management strategy for straight stem growth.
  - Rejuvenation pruning- A restorative pruning for overgrown shrubs that returns the plant material to a juvenile state.
  - Pollarding- Dormant wood pruning cuts are made to the main trunk starting on young plants. These cuts are made yearly, a few feet from ground level. This type of pruning forms trained, pollarded heads where many juvenile, vigorous stems arise. Pollarded height is determined my management needs.
  - Topping- is an indiscriminate, cutting of branches to the main trunk or branches on mature trees. Topping is never a recommended management practice that leads to disease and plant death.

# Basic Vegetative, Deciduous, Woody Propagation Principles & Practices

- Stock plant management
  - Keeping stock plants in a juvenile phase and reducing extreme plant stressors aids rooting success.
- Rooting substrate
  - Well drained media
- Rooting environment
  - Intermittent mist reduces evaporative demand on cuttings
  - Mist chambers- open or closed chambers and shade cloth
  - Bottom heat- 65-77F
- Type of wood
  - Softwood terminal shoots
  - Semi-hardwood lateral shoots
  - Layering
- Seasonal timing and the use of auxins
  - Taking mid-spring/early summer Softwood cuttings and using auxins (IAA, IBA, NAA) aids rooting success
- Hardening off



# Woody Shrubs





# Mock Orange

## *Philadelphus*

- Pros
  - Fragrant, late spring flowers. Practically pest free. Very hardy.
- Cons
  - Harvest season is short. Wholesale demand ebbs and flows
- Harvest Stage
  - Bud stage as flowers start to open
- Conditioning
  - Harvest in morning into cool water, remove some foliage
  - Vase life 5-10 days (double last longest)
- Species Suggested: Several different ones, make sure to check for hardiness zone and size.
  - Single: 'Audrey', 'Marjorie'
  - Double: 'Boule d'Argent', 'Buckley's Quill'



# Mock Orange

## *Philadelphus*

- Growing
  - An easy plant to grow in full sun.
  - All forms with white flowers in early summer, many not fragrant.
- Spacing
  - Plant on 4ft centers
- Pruning
  - Flowers produced on old wood off short laterals. Coppicing yields longer, straighter stems.
- Pests and diseases- None serious



# Mock Orange

## *Philadelphus*

- Take early to mid summer (June/July) softwood cuttings.
- Use a 1:1 peat/perlite mix.
- Dip cuttings in 1000ppm (parts per million) IBA solution.
- Use polyethylene tent, shading and intermittent mist.
- Check adventitious root formation after 6 weeks.
- Layering can be successful.



# Weigela

## *Weigela florida*

- Pros
  - Easy to grow and propagate. Can be used for foliage and flowers.
- Cons
  - Flower vase life is short, plants can be short lived, bloom on old wood.
- Harvest Stage
  - Cut when a few blooms in each cluster are open
  - for foliage, harvest late summer and early fall
- Conditioning
  - Does not like cooler
- Species Suggested
  - Variegated: 'Variegata', 'Sunny Fantasy'



# Weigela

## *Weigela florida*

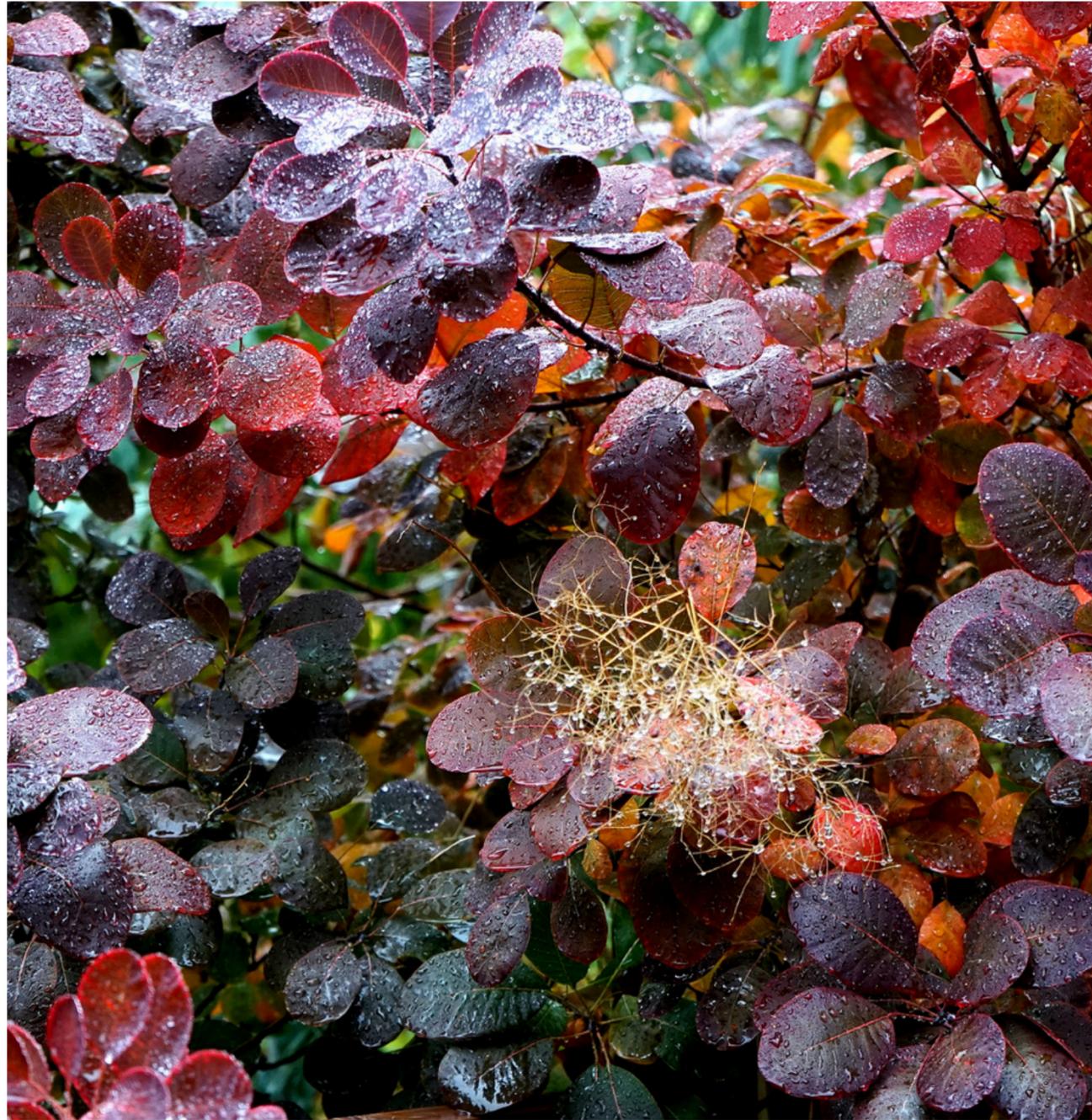
- Growing- Easy plant to grow for foliage, in full sun or protect from afternoon sun on some variegated cultivars. Blooms in the spring.
- Spacing
  - Plant on 2-4ft centers
- Pruning
  - Prune for foliage harvest by cutting the entire plant to the ground in fall.
- Pest and disease- none serious



# Weigela

## *Weigela florida*

- Take softwood cuttings in June and July.
- Dip cuttings in a 1000-3000 ppm IBA solution.
- Use a well drained media- 1:1 peat/ perlite mix.
- Use of polyethylene tents, shading and intermittent mist recommended.
- Check root formation after 6 weeks.



# Smokebush

## *Continus*

- Pros
  - Can be used for foliage and flowers. Fast grower, low pest pressure
- Cons
  - A choice has to be made between blooms and foliage. Sap can cause allergic reactions
- Harvest Stage
  - Foliage harvested summer - fall. Flowers, when 1/3 buds have opened
- Conditioning
  - Overnight in cooler with hydrator.
- Species Suggested: *C. coggygria* has showier blooms than *C. obovatus*
  - 'Grace', 'Velvet Cloak', 'Daydream', obovatus (male plants)



# Smokebush

## *Cotinus*

- Growing-Easy to grow
  - For foliage- A small tree/large shrub. Full sun, well drained soil.
  - For bloom- flowers on 2yr.old wood.
- Spacing
  - For foliage- plant on 30” centers
  - For bloom- Plant on 5-6ft. centers
- Pruning
  - For foliage- Coppice in late winter or pollard.
  - For flowers-Cut back hard every two years or selectively harvest every year.
- Pests and disease- Verticillium wilt disease and fireblight.



# Smokebush

## *Cotinus*

- Take shorter (4"-6"), softwood cuttings in June.
- Dip cuttings in a 1000-3000 ppm IBA solution.
- Use a well drained media- 1:1 peat/ perlite mix.
- Use of polyethylene tents, shading and intermittent mist recommended.
- Check root formation after 8 weeks.
- Harden off and overwinter cuttings without root disturbance. Transplant out in the spring.



# Deutzia

## *Deutzia scabra*

- Pros
  - White or pink flowers in early summer. Pest free
- Cons
  - Short vase life, can be difficult to find plants.
- Harvest Stage
  - cut in swollen bud all the way to the ground.
- Conditioning
  - Overnight in cooler with hydrator.
- Species Suggested: Make sure to check hardiness on new hybrids
  - 'Candidissima', 'Flore Pleno', 'Godsall Pink', 'Pride of Rochester'



# Deutzia

## *Deutzia scabra*

- Growing- Easy to grow in full sun; flowering white or pink in early summer.
- Spacing
  - Plant on 3-4ft centers.
- Pruning
  - Flowers produced on short laterals on old wood. Coppice well established plants every other year for straight stems.
- Pests and disease- none serious. Deer problems on 'Nikko'



# Deutzia

## *Deutzia scabra*

- Take softwood cuttings in June and July.
- Dip cuttings in a 1000ppm IBA solution.
- Use a well drained media- 1:1 peat/ perlite mix.
- Use of polyethylene tents, shading and intermittent mist recommended.
- Check root formation after 5-6 weeks.
- Layers easily.



# Beautyberry

## *Callicarpa*

- Pros
  - Purple and white forms, fast grower, native species
- Cons
  - Foliage has to be removed, fruits drop easily after harvest
- Harvest Stage
  - Berries do not color after cutting. Harvest when middle third is ripe
- Conditioning
  - Leaves can be removed with sprays in the field in fall or “sweated” for 3-4 days.
  - Can be placed directly into cooler dry and then foliage tends to remove easy, then recut and put in water.
- Species Suggested: *americana*, *dichotoma*, *japonica*
  - Purple: ‘Issai’, ‘Early Amethyst’
  - White: ‘Lactea’, var. *albifructus*, ‘Leucocarpa’



# Beautyberry

## *Callicarpa*

- Growing
  - Full sun, though white fruited form may benefit from light shade during fruit set.
  - Fruit matures in the fall.
  - Benefits from lean growing conditions.
- Spacing
  - Plant on 3-4ft centers.
- Pruning
  - Fruit is produced on new wood. Cut back hard in early spring, only leaving 8" above soil.
- Pests and Disease- None serious



# Beautyberry

## *Callicarpa*

- Take softwood cuttings July- September.
- Dip cuttings in a 1000ppm IBA solution.
- Use a well drained media- 1:1 peat/ perlite mix.
- Use of polyethylene tents, shading and intermittent mist recommended.
- Check root formation after 2-5 weeks.
- Dormant hardwood cuttings successful after 8-10 weeks.



# Scotch Broom

## *Cytisus*

- Pros
  - drought tolerant, wide color range, long stems, fast grower
- Cons
  - can be aggressive, some don't like smell
- Harvest Stage
  - can cut in tight bud
- Conditioning
  - floral preservative in cooler
- Species Suggested: Make sure to check hardiness on new hybrids
  - Yellow, white, peach, blush, pink, red, orange



# Scotch Broom

## *Cytisus*

- Growing
  - Fast, short lived, easy plant to grow in full sun. Grow lean, on a well drained site for best performance. Plants under 5 years produce the best cut stems.
- Spacing
  - Plant on 2ft. Centers.
- Pruning
  - Mid-spring flowers are produced on old wood. Prune immediately after flowering but not in a coppicing manner.

Pests and disease- leaf spots. This plant does not thrive on heavy, wet or clay soils.



# Scotch Broom

## *Cytisus*

- Take long 4"-8", softwood or heel cuttings in July-August.
- Dip cuttings in an 8000 ppm IBA solution.
- Use a well drained media- 1:1 peat/ perlite mix.
- Use of polyethylene tents, shading and intermittent mist recommended.
- Carefully, check root formation after 6 weeks. New roots are brittle on this species.
- Maintaining stock plant juvenility aids in rooting success.



# Bayberry

## *Myrica pensylvanica*

- Pros
  - fragrant foliage, long lasting gray fruit, native, long vase life
- Cons
  - market is not well established
- Harvest Stage
  - when foliage is mature and hardened off
- Conditioning
  - Do not use floral preservative
- *M. cerifera* and *M. gale* will not perform as well as *M. pensylvanica*



# Bayberry

## *Myrica pensylvanica*

- Growing
  - Plants are male and female (dioecious), prefer acidic soils and do best in full sun.
- Spacing
  - Plant on 3-5ft centers.
- Pruning
  - For foliage- Cut to ground in late winter, well established plants.
  - For fruit- Female plants only, produce fruit on old wood, coppice every other year.
- Pest and disease- None serious.



# Bayberry

## *Myrica pensylvanica*

- Take softwood stem cuttings in mid-June. Timing is critical.
- Dip cuttings in a 5000 ppm IBA solution.
- Use perlite only, cuttings are very sensitive to wet conditions.
- Use of polyethylene tents, shading and infrequent, intermittent mist recommended. Check often for signs of desiccation.
- Check root formation after 8 weeks. Expect only 50% rooting success.
- Overwinter without disturbing the root systems. Plant out in the spring or hold over an additional winter before planting out.



# Winterberry

*Ilex verticillata*

- Pros
  - Native, good season extension, yellow and orange varieties
- Cons
  - 4 years until full production, stems need defoliated, limited sales window, need male and female plants
- Harvest Stage
  - fruits do not color after harvest, cut before hard freeze
- Conditioning
  - Stems should be sweated after harvest, clean water, can dry store for several weeks at low temps
- Species Suggested: Make sure to get compatible male for pollination
  - 'Winter Red', 'Winter Gold',
  - Many species to choose from, look for varieties that hold onto fruit well.



# Winterberry

## *Ilex verticillata*

- Growing-
  - Plants are dioecious. Boggy areas are ideal for this plant. Grow in full sun. Production time is after 4 years. Female, fruiting stems used for fall and winter cuts.
- Spacing
  - Plant on 4-6ft centers with compatible male plants placed within 50ft of females.
- Pruning
  - Fruit is produced on 2-year-old wood. Usually, harvesting provides necessary pruning but coppicing can be done; providing fruit set every other year.
- Pests and disease- None serious. Heavily fruited plants, attractive to deer and birds.



# Winterberry

## *Ilex verticillata*

- Take softwood, terminal cuttings in June and July.
- Dip cuttings in a 1000 ppm IBA solution.
- Use a well drained media- 1:1 peat/ perlite mix.
- Use of polyethylene tents, shading and intermittent mist recommended.
- Check root formation after 6-8 weeks.



# Willow– curly & colored

*Salix* - for stems

- Pros
  - prolific producers, fresh or dried, large harvest window
- Cons
  - short-lived plant, saturated market?
- Harvest Stage
  - cut anytime after leaf fall, cold temps bring out color
- Conditioning
  - usually held dry
- Species Suggested: Many varieties
  - Contorted Stems: 'Snake', 'Tortusa', 'Sekka'
  - Colored Stems: 'Britzensis', 'Cardinalis', 'Vitellina', 'Flame'



# Curly Willow

*Salix matsudana 'Tortuosa'*

- Growing
  - Fast, easy to grow but short lived. Can be grown in wet areas in full sun.
- Spacing
  - Plant on 1-2ft centers for highest number of cut stems.
- Pruning
  - Coppice annually or pollarding extends plant longevity. New wood has the best color. New research coming out on best practices for Ky!
- Pest and disease- Tip dieback. Canker reduces the longevity of curly willow. Deer browse is a problem.



# Curly Willow

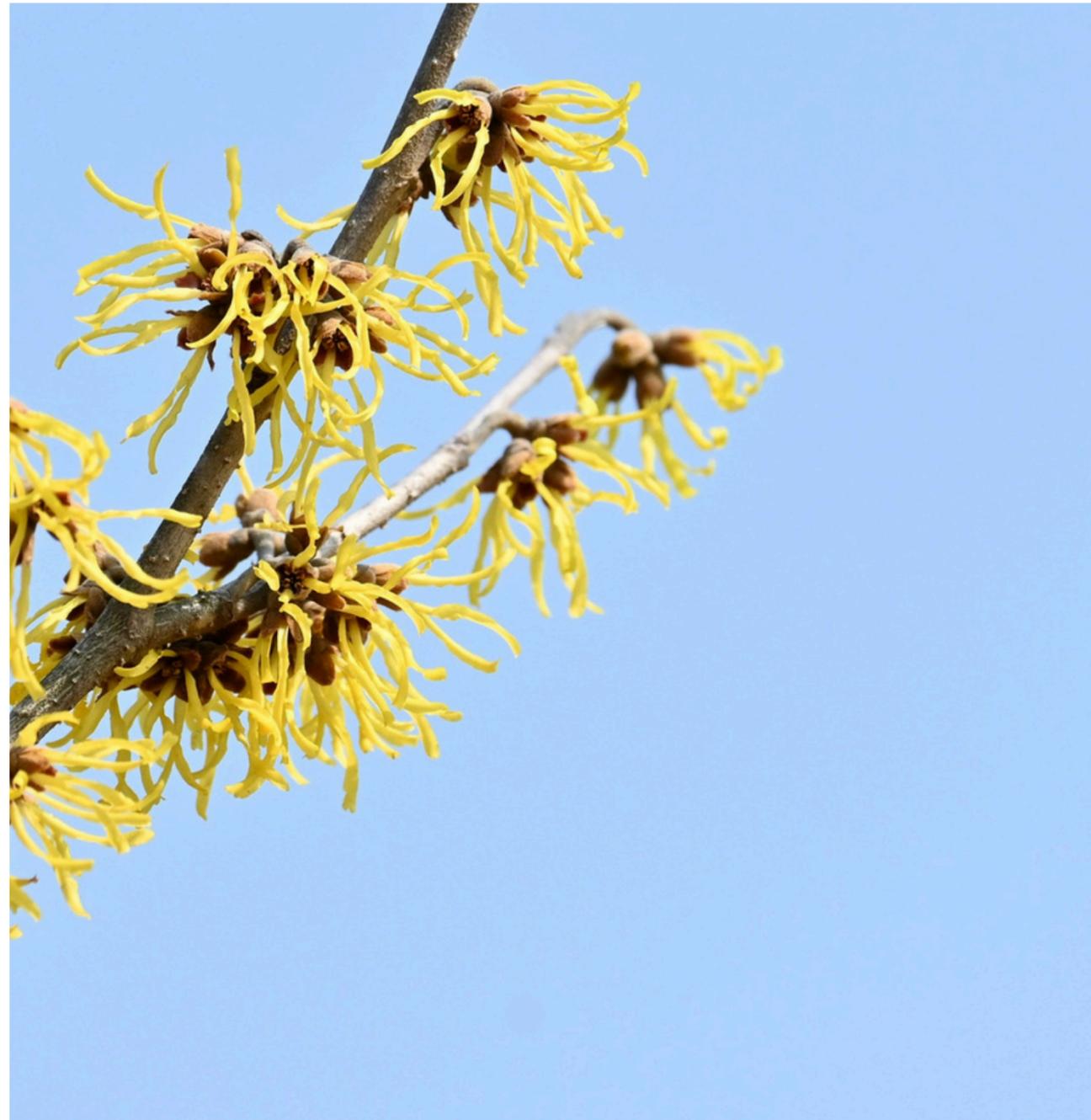
- Take softwood cuttings in June and July.
  - Take 7-10" and up to 1" diameter, hardwood cuttings after leaf fall. Cuttings can be dormant and stuck in prepared field soil beds.
- No need to use IBA on *Salix* as root initials are present all along stems.
- Media drainage is not concerning.
- Use of polyethylene tents, shading and intermittent mist recommended for soft wood cuttings- briefly.
- Check root formation after 3 weeks on softwood, or in spring for hardwood.



# Witch Hazel

## *Hamamelis*

- Pros
  - Flower and foliage production, long harvest season, readily available, fragrant flowers
- Cons
  - Wood is very hard so can be hard to hydrate
- Harvest Stage
  - Flowers: swollen bud or just opening
  - Foliage: Once leaves have matured and hardened off
- Conditioning
  - Overnight in cooler with preservative.
- Species Suggested: *H. intermedia* or *H. virginiana*
  - Several species depending on flower color and if you want fall or spring blooms



# Witch Hazel

## *Hamamelis*

- Growing
  - Spreading, multi-trunked plants, flower in late winter. Need a more acidic, well drained site, in full sun. Grafted plants are not recommended.
- Spacing
  - Plant on 6-7ft. centers
- Pruning
  - Plants flower on old wood. Plants can be coppiced back to two above ground buds. Flowering stems will occur every other year.
- Pests and disease- Witch hazel leaf gall but not considered limiting or serious.

# Witch Hazel

## *Hamamelis*

- Take softwood stem cuttings in mid-June, July. Using juvenile parent wood is recommended.
- Dip cuttings in a 1.0% IBA solution.
- Use peat/perlite 1:1.
- Use of polyethylene tents, shading and infrequent, intermittent mist recommended. Check often for signs of desiccation.
- Check root formation after 8 weeks.
- Overwinter without disturbing the root systems. Plant out in the spring or hold over an additional winter before planting out. Get a good root system going. Plant loss most often occurs at transplant.
- *Hamamelis x intermedia* often suckers.



# Purchasing

## **TNLA Buyer's Guide**

[https://tnla.com/TNLA\\_Buyers\\_\\_Guide](https://tnla.com/TNLA_Buyers__Guide)

## **Spring Meadow Nursery**

<https://springmeadownursery.com>

## **Local Nurseries**

Make sure to have a wholesale license

## **Walter's Gardens**

[www.waltersgardens.com](http://www.waltersgardens.com)

## **Southwest Nursery**

<https://www.southwestnursery.com>

## **Petitti Family Farms**

<https://petittifamilyfarms.com>

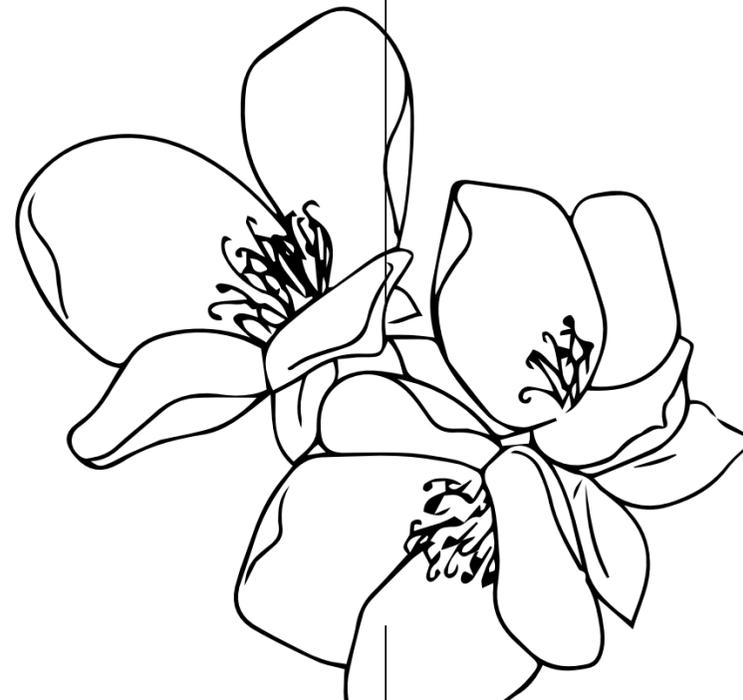
# Resources

## **Woody Cut Stems for Growers and Florists**

Lane Greer and John M. Dole

## **The Reference Manual of Woody Plant Propagation**

Michael Dirr and Charles Heuser



## CONTACT

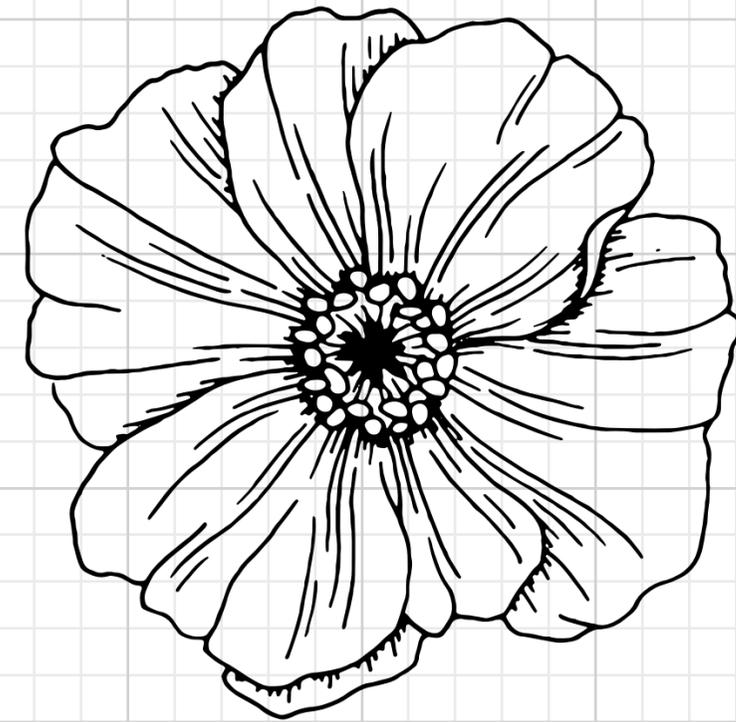
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# Questions?