



Starting New Plants from Seeds, Cuttings and More



STARTING PLANTS FROM SEEDS

Starting Plants from Seed

Step-by-Step Guide to Starting Seeds Indoors

SUPPLIES

- Planting media
 - Seed starting mix
 - Vermiculite
 - Paper
 - Or quality potting mix
- Containers - clean
 - Disinfect used containers
 - ✦ Soak in 1 part bleach / 9 parts water solution for 10 minutes, then rinse with clean water
 - Recycled items
 - ✦ Yogurt cups
 - ✦ Paper towel and toilet paper cardboard cores
 - ✦ Newspaper (pot maker or origami)
 - ✦ Cow pots, peat pots, Jiffy 7's
 - ✦ Cell packs
 - ✦ Flats
- Heating mat designed for starting seeds (optional)
- Grow lights (optional)

CHECK THE SEED PACKET FOR PLANTING

DETAILS

- Timing (indoors and outside)
- Planting depth and spacing
- With or without lights
- Any special treatments
- Expiration date

TESTING SAVED SEEDS VIABILITY

- 10 seeds in moist paper towel
- Roll towel and place in plastic bag
- Check in 7 days
 - If all germinate, plant as directed on seed packet
 - If half sprout, plant twice as close together

SPECIAL PREPARATION FOR CERTAIN SEEDS TO PROMOTE GERMINATION

- Scarification
 - Scratch hard seed coat and soak overnight
- Stratification
 - Cold treatment to break dormancy
 - Moist or dry cold (fridge, *NOT* freezer)

PLANTING SEEDS

- Broadcast seeds into flat to transplant later
- Plant 2 seeds per cell or container
- Dealing with small seeds
- Gently water
- Move to warm location (heating mat optional)
- Keep soil moist

ONCE SEEDS SPROUT

- Move to sunny window or under artificial lights as soon as green appears
 - In window - rotate containers to encourage even growth
 - Under artificial lights
 - ✦ On for 14, no more than 16 hours per day
 - ✦ On for 5 to 6 hours if supplementing natural daylight
 - ✦ Locate lights 4 to 6" above top of plants
 - May need more distance between plants and lights if using LED lights
 - ✦ Set on reflective surface to bounce light back onto plants

ONCE SET OF TWO TRUE LEAVES FORM

- Transplant those in flat into individual pots
- Thin those in individual pots, removing the weakest of the two
- Begin fertilizing as needed

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PROBLEMS

- Leggy growth
 - Started too early
 - Insufficient light
 - Too warm
 - Too much fertilizer
 - Lack of air movement
- **Damping off**
 - Seedlings suddenly wilt and die
 - Avoid problems by using clean containers and sterile planting mix
 - ✦ Do not reuse plastic containers where damping off occurred - can't adequately disinfect plastic
 - If a yearly problem, consider using fungicide treated seeds

WINTER SOWING

- Supplies
 - Plastic milk jugs, 2 liter soda bottles or similar items - remove caps
 - Quality potting mix
 - Marker
 - Duct tape
- Cut bottom of container leaving 3 to 4" at bottom - connected by handle
- Holes in bottom of container for drainage
- Fill bottom with moist planting mix
 - Some people insert cardboard tubes for easier transplanting
- Plant seeds per directions
- Gently water
- Label inside and outside of container
- Close and tape shut
- Set outside in sunny location where containers can benefit from rainfall and snow
- Secure in place
- Water if needed

VEGETATIVE PROPAGATION

Cuttings, Layering & Division

LEAF AND STEM CUTTINGS

- Supplies
 - Plants for propagating
 - Rooting media
 - ✦ Vermiculite
 - ✦ Perlite
 - ✦ Potting mix
 - Containers with drainage holes
 - Plastic bags
 - DIY rooting pot (optional)
 - Rooting hormone contains hormones to promote rooting hormone (optional)
 - Houseplants, herbaceous plants are the easiest to root
 - ✦ No patented plants
- The Process
 - Use snips or bypass pruners
 - Cut above leaf or node for quicker closer of wound
 - Shorter cuttings 3 to 4"
 - Remove lowest leaf
 - Dip in rooting hormone for hard to root cuttings
 - Stick cutting in rooting medium, bury the node
 - Gently tamp rooting medium to secure the cutting
 - Water thoroughly to moisten rooting medium
 - Set in plastic bag to increase humidity
 - Place in a brightly lit location, out of direct sunlight
 - Water often enough to keep soil slightly moist, not soggy
 - Check in two weeks - give a gently tug
 - Replant, if needed, into container with potting mix



About Melinda

Nationally known gardening expert, TV/radio host, author & columnist Melinda Myers has over 40 years of horticulture experience and has written over 20 gardening books, including *Can't Miss Small Space Gardening*, the recently revised *Midwest Gardener's Handbook*, and Jackson and Perkins' *Beautiful Roses Made Easy*. She hosts the nationally-syndicated "Melinda's Garden Moment" program airing on radio stations throughout the U.S. Melinda also hosts the internationally distributed Great Courses "How to Grow Anything" Instant Video series, including *Food Gardening for Everyone*. She is a columnist and contributing editor for *Birds & Blooms* magazine, and writes a nationally-distributed gardening column. She appears regularly as a guest expert on national and local television and radio shows.

Visit Melinda's website,
melindamyers.com

- **DIY Rooting Pot**
 - Supplies
 - ✦ Small terra cotta with NO drainage holes
 - ✦ Large pot with drainage holes
 - ✦ Rooting medium
 - ✦ Cuttings
 - Set small pot in center of rooting medium in larger pot
 - Water rooting medium and fill small pot with water
 - Stick cuttings in area surrounding small pot
 - Set the whole thing in an open plastic bag out of direct sunlight
 - Monitor soil moisture
 - ✦ Watering and filling small container as needed

- **Succulents**

- Take cutting and allow to callous for a day or two
- Set in well-drained / gritty planting mix
- Keep just slightly moist
- Place in brightly lit location, out of direct sunlight
- Monitor rooting process
 - ✦ Typically 2 to 3 weeks

- **LEAF CUTTINGS**

- **Jade Plant**
 - Pieces that fall off the plant often root in potting mix with no help from us
 - Allow the leaf to callous over
 - Set leaves on surface of a gritty potting mix
 - Keep soil surface very slightly moist to encourage rooting
 - Place in a brightly lit location, out of direct sunlight
 - New plant will form next to leaf in 1 to 2 months
- **African Violet**
 - Remove leaf with petiole (leaf stem) attached
 - Stick petiole in moist rooting mix
 - Keep rooting mix evenly moist

- Set in open plastic bag
- Place in a brightly lit location out of direct sunlight
- Plant forms at base of leaf in 1 to 2 months

- **Snake Plant Leaf Cutting**

- Variegation does not transfer with the leaves (the genetics are contained in the rhizome)
- Cut the leaf into several 2-3" sections, notching the bottom that was closest to the roots for proper orientation
- Stick bottom of cutting into rooting mix
 - ✦ Use individual pots or larger container / flat to root several pieces in one container
- Place in a brightly lit location out of direct sunlight
- Keep rooting mix evenly moist
- New plant with form in 1 to 2 months

- **Rex Begonia Leaf Cutting**

- Fill pot with moist rooting medium
- Remove leaf and secure bottom of the leaf to surface of the medium
- Slice through several veins
- Set in plastic bag and keep medium moist
- Small plants sprout in 1 to 2 months
- Once sprouted and growing, transplant into individual pots

- **CANE CUTTINGS**

- **Dieffenbachia Cane Cutting**

- Cut bare stems into 2" pieces
 - ✦ May be done after air layering or rooting leafy top portion
- Set pieces on their side on top of the rooting mix in the container
- Bury half of the cane, leaving the other half exposed
- Place in a brightly lit location out of direct sunlight
- New plants will form from each cane cutting in 1 to 2 months

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TREES AND SHRUBS ARE MORE CHALLENGING FROM CUTTINGS

- Timing and taking the right type of cutting for the plant is critical for success
- **Hardwood Cuttings**
 - Made during the dormant season
 - 4 to 8" long with at least 2 nodes and slanted at bottom
 - Bundle, lay on their side and bury in sand, soil or sawdust
 - Store cuttings in a cool (above freezing), moist location
 - Plant in spring, slanted side down
 - Once rooted, treat like bare root plants
 - * Those of you in mild areas can combine storage and rooting
 - ◊ Dig a trench
 - ◊ Burying all but the top bud of the cutting
 - ◊ Keep soil moist
 - ◊ Should be rooted by spring
- **Semi-Hardwood Cuttings**
 - Made during summer when new growth has begun to mature
 - Make 3 to 6" cuttings with slant on the bottom
 - Remove lowest leaf and cut large leaves in half, if needed
 - Stick cuttings in rooting medium and boost humidity
 - Root in shaded location with high humidity
- **Softwood Cuttings**
 - Made from tender new growth in spring
 - 3 to 5" cuttings that tend to root quickly
 - Remove any flowers and flower buds
 - Stick cuttings in rooting medium and boost humidity
 - Used for certain perennials

LAYERING

- Often happens in the garden
- Select a healthy stem towards the outside of the plant
- Make cut halfway through the stem, about 9" below the tip
- Treat cut area with rooting hormone
- Bury the cut portion and secure in place
- Keep rooting medium moist and stem connected to plant
- Once rooted, cut the stem between newly rooted and parent plant

AIR LAYERING

- Make cut halfway into stem, below leafy portion
- Wedge the cut open with toothpick
- Sprinkle rooting hormone into cut
- Surround with moist sphagnum moss and wrap in plastic
 - Secure the plastic in place with twine or twist ties
- Watch for roots to form in 1 to 2 months
- Once rooted, remove plastic and cut stem off below rooted portion
- Plant the rooted top into a container with drainage holes only a bit larger than root ball
- Water and care for as before
- Cut remaining stem back closer to the pot
- One or two shoots will sprout from remaining stem

DIVISION

MAKE SEVERAL PLANTS OUT OF ONE

- Houseplants
- Perennials
 - Use a sharp knife and cut between crowns or stems and through the roots
 - ◊ Shovel or reciprocating saw for densely rooted perennials
 - Divide in half, quarters or more depending on plant size and your goals
 - Plant the divisions in a container just slightly larger than the root ball
 - Plant perennial divisions in gardens with properly prepared soil
 - Water thoroughly
 - Monitor and adjust watering schedule as needed

OFFSETS

PLANTS THAT FORM SMALL, ROOTED PLANTLETS (OFFSETS) WHILE STILL ATTACHED TO PARENT PLANT

- Remove offset or separate side shoot (keeping roots, stems and leaves intact)
- Pot up the offset and water
- Provide adequate moisture and in several weeks will have rooted into medium
- Starting New Rosary Vines from Aerial Tubers

UPCOMING APPEARANCES & WEBINARS

Check often as more appearances and webinars continue to be added.

Webinar March 11th

*Save Money & Boost Your Growing Success with
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Webinar March 18th

Patio, Deck and Balcony Gardens

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Get Started Growing Vegetable and Flower Gardens

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Grow a Bountiful Harvest

Webinar April 9th

7 Steps to Managing Water on Your Property

April 11th

A Day in the Garden

April 18th

Spring Rally

Ebert's Greenhouse Village April 19th

Deer Resistant Gardening

Iowa State University Lectures April 23rd

Gardening for Health & Wellbeing

Spring Seminar at Pasquesi April 25th

*Top 5 Favorite Annuals, Perennials, Vegetables &
Shrubs for the Landscape*

Ebert's Greenhouse Village April 26th

Common Tomato Problems & How to Solve Them

Ebert's Greenhouse Village May 2nd

Ask the Plant Doctor

Webinar May 6th

Adding Native Plants to Any Size Gardening Space

Ebert's Greenhouse Village May 9th

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Ebert's Greenhouse Village May 17th

Ask the Plant Doctor

Webinar May 21st

Planting & Care of Your Rain Garden

Webinar June 3rd

Managing Your Landscape with Pollinators in Mind

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Growing a Bountiful Harvest Even When Your Time, Space & Budget are Limited

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How-to Video & Activity

Grow a Container of Native Plants

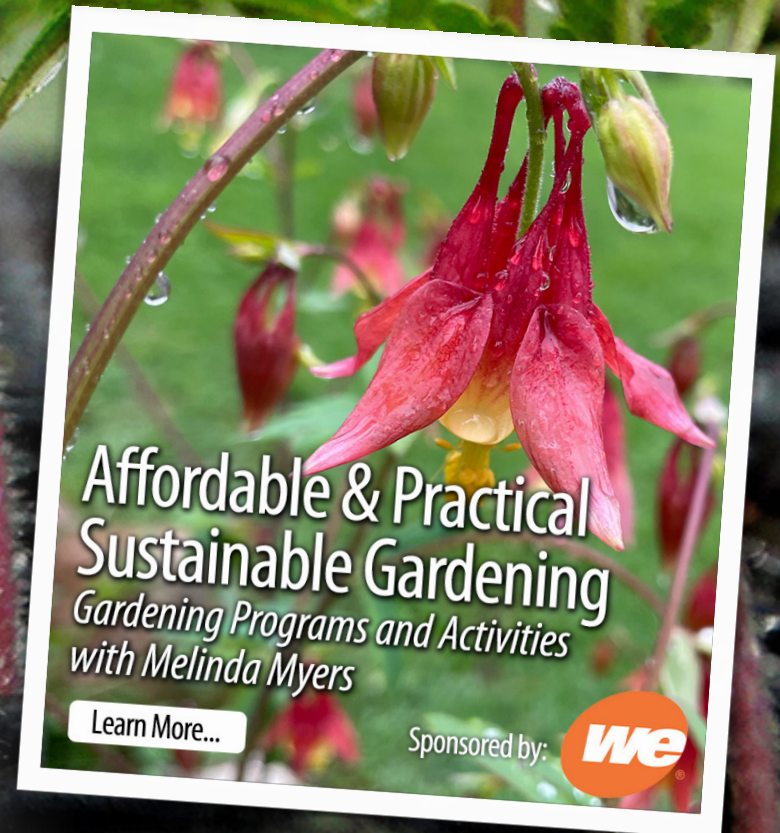
JUNE

Webinar June 3rd

Managing Your Landscape with Pollinators in Mind

How-to Video & Activity

Incorporate a Few Eco-friendly Gardening Practices that Make a Difference



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