

# Nature Is My Greenhouse: Let's Simply Propagate—Part I

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I must admit right off that my once-productive vegetable garden west of Lexington, South Carolina, has grown up in neglect since I discovered that I can easily propagate and grow native plants the entire 12 months of the year outdoors with no greenhouse needed and very minimal expense.

I started in the winter of 1990-91 with two little one-gallon pots that I stuck dormant native azalea cuttings into and covered them with two two-liter soft drink bottles. I did this on a whim using dormant, leafless wild azalea cuttings that a botanist clipped from his fresh, soon-to-be dry herbarium specimen. My intent was to keep the stems alive long enough to produce blooms. I stuck one pot of leafless stems with flower buds present and a second pot of stems with only leaf buds.

I had pretty much forgotten about the two pots of unknown wild azalea cuttings until I noticed from a distance something white in one of the two pots in mid-May, and when I looked closer I found open azalea blooms—white and fragrant—by which I could determine the species. The real surprise was in the second pot, which was filled with green leafy stems that had rooted. The cuttings in the blooming pot had not developed roots during the same period, but had spent all their energy in feeding those fat flower buds. I learned several lessons: I can root the reputedly difficult native azaleas; I don't need a greenhouse to root plants; dormant cuttings will root, given time; and flower buds should always be removed from cuttings I want to root.

Over the past several years I have been developing and refining a natural approach to both seed and cutting propagation that uses nature's calendar and climate controls. My simple, low-tech approach finds a use for all sorts of recycled materials, like pots, hanging baskets, clear soft drink bottles, wire and so on. A friend from Norway once called my techniques "Creel-Way" propagation and the name stuck.

I like to say that nature is my greenhouse. Patience and leaf mold provide my rooting hormones, and the weather whims of the four seasons are my climate controls. In the center of South Carolina where I live the native plant gardener can pretty much plant seeds and stick cuttings outdoors with minimal equipment year-round, except for rare days of steady rain and sustained freezes.

Consider the principal features of Creel-Way propagation below and compare them with traditional propagation methods. You will find them quite different from the norm, less expensive, and more carefree.

I go to extremes to ensure good drainage and a sturdy container, since both help my plants survive and prosper with inattention. Once I fill a pot with cuttings or seeds, it must be able to withstand local extremes of heat and cold, periods of heavy rain, wind, shifting angles of the sun, and frequent attacks by squirrels, birds, curious cats and other varmint.

What is different about Creel-Way propagation from usual practices?

- It is done totally outdoors, and possible all 12 months if weather permits.
- It needs no expensive greenhouse, and can be done very small scale, even one pot.
- It uses inexpensive materials, such as recycled containers and pots.
- It works for all vascular plant species with little variation, both woody and perennial.
- It requires no rooting hormones, fertilizers, pesticides or fungicides.
- It duplicates natural, thorough drainage by adapting pots and media.
- It is easy to begin and requires minimal cost, time and upkeep.
- It can be adapted to any region by changes in timing and local materials.

I will teach you ways to propagate native plants easily on a budget so you can preserve, grow and propagate native plants around your home garden without removing them from the wild. Most vascular plants can be rooted from green or woody cuttings outdoors, in a well-shaded area kept just moist. There are some tricks to doing this right. Rooted cuttings will be copies of the plant unless the cutting is a "sport" or mutated stem. Seed grown plants will be similar to parents in colors and habit, but not identical.

Why should we be interested in propagating native plants? So you won't be tempted to dig and remove plants from the wild. Because most home site preparation destroys preexisting native plants. Because local varieties are seldom propagated and used in home landscapes. Because local and regional forms are rarely offered by nurseries. So we can share extra plants and clones with gardeners. So we can select and provide cultivars for nurseries and friends. So we can learn to propagate better and teach others how to. So we can copy local and rare forms and species for restoration. So we can restore missing species to our homesteads.

The main things I do in native plant propagation are:

- For woody species like trees, shrubs and vines sticking only woody cuttings, regardless of the season.
- Keeping cuttings stored in the refrigerator for extended periods, in inflated plastic bags with no water.

- Drilling extra drain holes in pots with a 3/4 inch hole-saw in a uniform staggered pattern;
- Filling pots for cuttings or seed only half full with “special recipes” of fast-draining media;
- Covering seed pots with secured “varmint caps” of wire mesh, 1/4 inch hardware cloth;
- Topping media in seed and cutting pots with sifted humus fines from the same or a related species;
- Using no fertilizers, rooting hormones, fungicides, pesticides or chemicals;
- Wounding and sticking woody cuttings (not new growth) into “dryish” media, using no hormones;
- Attaching to cutting pots “mini-greenhouse” non-degrading clear or translucent plastic domes that allow water to reach media between the dome and the pot rim with 1/2 inch or more clearance;
- Placing pots just off the ground on a pedestal or hanger to prevent earthworm invasion;
- Protecting closed dome-pots of cuttings from full sun with 65-70 percent shade cloth;
- Watering pots after placing them, and then as needed to total one inch per week;
- Disturbing pots only when imperiled by saturated media or other problems; and
- Letting nature do the rest.

Several new things I’ve learned since my last propagation workshop:

- Propagation pots and humidity domes can be made from a wider variety of containers.
- Regular clear 2-liter soft drink bottles work well as humidity domes for one gallon pots.
- Discarded hanging baskets of all sizes can be converted into propagation and plant pots.
- A corded drill, which rotates faster, works better than a rechargeable one to enlarge and add drainage holes to pots or for vent holes, and will make clean holes in thinner plastic pots.
- A 3/4 inch hole-saw bit works best for making drain holes in all sizes of pots and containers.
- Securely wire propagation domes and varmint caps to the pot, rather than using a press-in hold-down.
- Woody cuttings can be taken year-round in many areas, though a cold frame may be needed.
- Woody cuttings can be stored cold for longer periods in a plastic bag with no added moisture.
- Pre-trimming and retrimming woody cuttings for transport storage does not hurt them.
- To rescue cuttings and plants imperiled by growing in too-wet or too-dry pots.
- Pine bark mini-nuggets are important to sustaining good media drainage.
- Do not use sand, gravel, or pea pebbles in media mixes, even coarse washed sand.
- By doing a postmortem on failed pots of cuttings and seeds, you can learn what you did wrong.
- Be alert to survivors in apparently failed pots of cuttings and seedlings.

## NOT-SO-TECHNICAL TERMS

### I USE REPEATEDLY

Cuttings are always woody stems, unless I am rooting perennials, when I use firm green stems.

Humidity Domes or Domes are clear or translucent bottles or containers I use to cover cuttings.

Vent Cap is a screw-on bottle cap or a rubber plug made from a chair foot that seals a dome.

Drilled Pot is a nursery pot or container that has been improved with extra drainage holes.

Hold-Down is a bendable wire to secure clear domes to prop-pots by two holes made in the pot rim.

Dome-Pot is a combination of a dome, vent cap, drilled pot, hold-down, and media.

High-Rise Pot is a pot for cuttings or seeds made from used or new hanging baskets drilled for proper drainage and fitted with a clear dome made from a one-gallon spring water bottle.

Hole-Saws are drill bits for making holes in pots and domes, 3/4 inch for drain holes, 7/8 inch and larger for vent holes in domes.

Vent Plugs made from rubber chair feet are used to seal vent holes in certain domes.

Varmint Caps are pot covers made from hardware cloth, 1/4 inch mesh 2 feet wide, attached to pots of seedlings or small plants with a length of wire. A 6-inch square covers a gallon pot.

Two-Brr Pot is a pot made from a plastic box drilled for drainage, fitted with 2 domes for cuttings.

Pedestal is a support made from anything to keep a pot off the ground, to aid drainage.

## GETTING STARTED

### IN CREEL-WAY PROPAGATION

You will need a few basic facilities, materials, and tools to get started:

- (1) Create an area that you can keep shaded and watered year round for dome-pots;
- (2) Have an adjacent area in the sun to grow out cuttings and seedlings;
- (3) A potting bench is also useful, easy to build pre-cut ones are available as kits;
- (4) A small sprinkler and egg-type timer provide easy weekly watering when rain does not;
- (5) Get a number of plastic pots, one gallon and larger, preferably thick walled;
- (6) Scavenge (or buy cheaply) some clear or translucent containers for use as humidity domes, 2-liter clear soft drink bottles, 3-liter soft drink bottles and one-gallon spring water bottles are best;
- (7) Buy or salvage some 1/4 inch mesh hardware cloth to make varmint caps for seedling pots;
- (8) Heavy scissors or surgical shears for cutting the bottom from propagation domes;
- (9) Flexible wire, like electric fence wire, serves to fasten humidity domes and varmint caps to pots;



(10) Keep handy some wire cutters for trimming wire hold-downs;

(11) Have a pair of tin snips for cutting wire mesh and a pocket knife awl for hold-downs;

(12) Find some durable identification labels, erasable ones if possible;

(13) You need a hand cultivator and large pot, or some other means, for mixing small batches of media;

(14) For media buy pine bark soil conditioner, pine bark mini nuggets, and Fafard 3B potting soil; and

(15) A 3/8 inch corded drill to make new drain holes in pots and vent holes in propagation domes.

A shade cloth on a frame is essential when rooting cuttings in clear humidity domes, regardless of location or season. You cannot depend totally on tree shade. I use a 6 by 15 foot Coolaroo brand mesh shade cloth (medium density, blue margin thread) that limits sun reaching the dome-pots by 64 to 70 percent. I use a green one (for luck) supported by an old dog pen fence with 2-inch PVC cross beams. Not pretty, but it has worked for years.

Recently I built a better-looking shade bed with six six-foot treated posts at six-foot intervals along a 14-foot-wide concrete pad, where a dog pen had been. I screwed treated 1 by 5-inch boards along the top outside of the posts. This created two four-foot-high areas where I can stretch two 6-by 15-foot shade cloths across and roll the cloths up when needed for access or watering.

Without secure and consistent shade, cuttings in a dome pot will “cook” after an hour or so even in winter. I found simple plans online for a PVC-frame lawn tractor shed that would work great as a small shade enclosure. A very small shade device can be made for one or a few pots. Stiff wire will form a small shade support.

### DESIGN AND USE OF CREEL-WAY DOME-POTS

All of my “dome-pots” for stem cuttings work on the same design, appearing to be miniature greenhouses, but much more carefree. Each dome-pot maintains a warm captive high humidity environment inside a clear or translucent dome, while the root zone stays moist but well-aerated and fast-draining through proper media selection and extra drainage holes. Given sufficient time, filtered sunlight and warmth, any good cutting will root in a dome pot.

In warmer regions such as where I live in the central midlands of South Carolina, or USDA Hardiness Zone 8A, woody cuttings of many species can be collected and stuck in outdoor dome-pots year-round, even during plant dormancy. In colder areas subject to severe and prolonged freezes, dome pot cuttings would need to be stuck during the growing season or protected by a cool greenhouse or cold frame. Dormant cuttings in zones colder than 8A could be stuck outdoors near the end of winter just before bud emergence. Terminal buds and bloom buds always need to be removed.

Dome-pots are protected outdoors from overheating by a 64-70 percent shade cloth and receive weekly watering from nature or a sprinkler to equal one-half to one inch. No

rooting hormones or chemicals are used, but a little local native humus is added to the media surface. Woody cuttings “only” are used for woody plants, and firm green stems are used as cuttings for herbaceous plants that form joints.

Once cuttings are rooted, after about three warm months in a dome-pot, the ventilation cap or plug is removed to allow cuttings to acclimate to drier outside air, while the now-vented dome is kept in place with the pot still protected by shade for another 4 to 6 weeks. After this period the pot can be moved into a sunny area with the open vented dome kept in place or removed. Usually after four months the cuttings can be repotted from a dome-pot to separate pots or spaced out in a larger pot.

Both propagation domes and pots can be made from a variety of containers, if they are the right size, can be drilled easily for drain holes or ventilation holes and do not break down or become brittle with prolonged exposure to sun or climatic changes.

### DESIGN AND USE OF THE CREEL-WAY SEED POT

Rather than grow native plant seeds indoors under lights, I plant them outdoors throughout the year in well-drained pots protected by wire mesh commonly sold as hardware cloth. All pots are filled with fast-draining media to the halfway point or slightly above and all have been converted to fast drainage with a 3/4-inch hole-saw.

With varmint cap covers I use all sizes of pots for seed, from one gallon to 10. Find a sunny spot, drill pot, prepare wire mesh varmint cap, mix media, fill pot halfway, sprinkle humus, sprinkle seeds, install varmint cap, move pot to bed in sun or half shade, put on pedestal, water in *situ* after moving pot to long-term location, water once weekly if no rain.

When planting seed pots you will need fresh seeds or seeds that have been properly maintained since collection. Small seeds like azaleas and rhododendrons are surface sown, while larger ones like dogwood and *Stewartia* are planted shallow. I sprinkle humus fines from like or related species on the media surface before planting.

I always use varmint caps for seed pots to protect seedling pots from squirrels, birds, and other varmints with a wire mesh cap. For one-gallon pots I cut a 6-inch square of 1/4-inch mesh hardware cloth (from 2- to 4-foot wide wire fabric) using tin snips and bend the edges down for fastening to the pot.

Varmint caps can also protect small cuttings planted low in the pot. For three-gallon or larger pots I cut a 12-inch square, snipping three to four inches long with 45-degree cuts into each corner and 90-degree slots midway each side, which aids in bending edges to fit various pots. Secure the varmint cap to pot with a single wire attached to a hole on each side.

### MEDIA CHOICES AND SOURCES

Choosing and mixing media for outdoor propagation pots is a primary concern of mine. I have found no commercially

available media mix that is ready to use as is. Most have a tendency to become saturated in a pot that is watered weekly and exposed to rains.

For propagating cuttings and seedlings I use one primary media mix (Mix A) which drains well and maintains thorough drainage over time. I mix media with a hand cultivator in a 10-gallon low pot or by shaking a 6.5-gallon clear trash can with lid. The second way provides good exercise and you can see the mixing. The small amount of perlite in mixes A and B offer visual evidence of good mixing.

**Media Mix A:** For a long time my all-purpose mix for cuttings and seeds has been 5 parts soil conditioner (a finely milled and composted pine bark mixed with one part of a soilless mix such as Fafard 3 or Baccto® Pro or an equivalent soil-less mix). I use this in pots that have been drilled for drainage, and I fill pots just to or slightly above the halfway point with media.

**Media Mix B:** This is a recent mix I am experimenting with for cuttings and seeds, which I make by mixing 6 parts of soil conditioner or pine bark fines with 1 part of pine bark mini-nuggets and one half of a soil-less mix as cited above. This mix drains so well that drilling of extra drainage holes may not be necessary.

**Media Mix C:** This new mix for repotting seedlings and cuttings came from my friend Vivian Abney in Tennessee and is showing good performance in full pots that have not been drilled for extra drainage. This repotting mix contains 2 parts of soil conditioner or pine bark fines mixed with 1 part of pine bark mini-nuggets. I usually double the recipe on this one to create a good batch of media.

When using Media Mix A, pots need to be drilled for extra drainage, half-filled with media if a standard tall (not a low, wide) pot is used, set on a pedestal (made from anything that drains) off the ground or hung from a tree or support.

Find locally available equivalents to the materials I use. Develop your own media from local suppliers, but it must drain well in a container and break down slowly.

The soil conditioner I use is from P and L Bark in Pageland, South Carolina, and sold by Lowes as Garden Plus soil conditioner (product number 97675). P and L Bark is on the bag label in small print. The Gro-Bark company in McCormick, South Carolina, also produces a good pine bark soil conditioner. Many commercial azalea nurseries use similar bark media. Take care not to let your bags become saturated by the rain.

Do not mix or use media that is already saturated. Investigate locally for similar materials.

It surprises most people when they learn that I use no rooting hormones to root cuttings. Before sowing seeds or sticking cuttings into media I sprinkle about a teaspoon of humus fines (sifted through a mesh pot or crumbled between my fingers) onto the media surface.

I collect fresh humus as a combination of rotted leaves with some soil from nearby plants of the same or a closely related species from beneath unrotted leaves in the root zone. It is rich in natural soil bacteria and *mycorrhizae*. I try to select mature plants not heavily fertilized or sprayed

regularly with fungicides.

The humus must be from the new area where the plants will be growing, not from the original site where the mother plant was growing. In pots of cuttings or seeds I avoid fertilizer, fungicides, pesticides, and over watering.

Prompt, thorough drainage is key to rooting cuttings and growing seedlings. Container drainage can be improved by: (1) selecting pots that drain well such as low wide pots and mesh garden pond pots; (2) limiting media level to 1/2 or 2/3 full; (3) drilling extra drain holes; (4) changing media recipe to drain faster; and (5) elevating pots off the ground on a pedestal or hanging the pot in the air. Never use pots with only drain holes in the bottom.

Earthworms are drainage demons of the flower pot and will invade a propagation pot via drain holes in the pot bottom quickly converting a pot of well-draining media into saturated media which destroys the air spaces needed for roots on cuttings, seedlings, and plants. Avoid putting pots into direct ground contact but elevate them on draining material.

## SELECTION AND USE OF PROPAGATION DOMES

Propagation domes to hold humidity around cuttings in the process of rooting must be made of clear, transparent or translucent plastic that does not break down quickly outdoors. They must have a sealable and removable upper vent hole such as a screw-on cap. If a potential dome has no vent, it must be of a material that is easy to drill so ventilation hole can be installed top center. Rubber chair feet of different sizes work well as vent plugs.

Bottles converted to propagation domes need to have their bottom removed making a straight cut with heavy scissors or surgical shears. Tall bottles such as a 3-liter soft drink container can be cut in half to make two domes, or left tall for long cuttings. Cylindrical plastic food containers and other liquid containers can be turned upside down, then a vent hole drilled.

Matching a dome to the pot is critical to the function of the dome-pot. Domes must fit inside (not outside) the propagation pot with a minimum 1/2-inch clearance between dome edge and pot rim for water to enter media in the pot from overhead—rain, hose nozzle or sprinkler—and flow down into that space and into the media. Each dome must be centered in the pot against the media and secured with a strand of wire. The dome-pot must permit easy entrance and drainage of water. Never enclose a pot inside a dome.

A standard 2-liter soft drink bottle cut in half, or using the upper 3/4 of the bottle, works well as a dome for a one-gallon pot. Some wider one-gallon pots have enough space to use a 3-liter soft drink bottle cut in half. It must be centered onto the media and wired to the pot.

Three-liter soft drink bottles, which are hard to find today, make good propagation domes for wider gallon pots, mum pots, two-gallon pots, medium hanging baskets and low azalea pots. Once the 3-liter bottle is cut in half, the top half already has a sealable vent hole, the cap. A vent hole in the



dome made from the bottom half of the bottle can be made by carefully drilling it with a 7/8 inch hole-saw. I invert a bottle half over a 2-foot 4 by 4 post section in the ground (with the bottom of a 1-liter bottle bottom half snugly fitted over the post, which stabilizes the 3-liter bottle section slid over it. I drill a center hole and plug it with a 5/8-inch outside diameter rubber chair foot. Three-liter soft drink bottles can be found only as chain grocery store brands.

Clear one-gallon PET spring water bottles work perfectly in three-gallon pots, hanging baskets and larger pots. Be sure to use clear, weather-durable plastic bottles. Translucent gallon milk bottles will work as domes, but they become brittle outdoors. To clean algae off the inside of domes use moist fine sand and water.

I recommend using the durable clear one-gallon bottles sold by Nestlé Waters North America brands: Arrowhead® Brand Mountain Spring Water (in CA, AZ and NV), Deer Park® Brand Natural Spring Water (in Northeast and Atlantic states), Ice Mountain® Brand Natural Spring Water (in Midwest and near-South states), Ozarka® Brand Natural Spring Water (in TX), Poland Spring® Brand Natural Spring Water (in Northeast and Mid-Atlantic states) and Zephyrhills® Brand Natural Spring Water (in FL). One-gallon Dannon spring water bottles of similar material also work well as propagation domes in the pot sizes mentioned.

Attaching the propagation dome to the pot is required to maintain a seal between the propagation dome and media in the pot. Don't cover the pot with the dome. The dome should be centered on the media with at least 1/2 inch of open space all around to permit overhead water to enter the media between dome and pot rim. Water entering media from the pot margin will migrate to the center of the pot, moistening all the media.

Make two small holes in opposite top edges of the pot rim, fit a length of flexible wire (electric fence wire) through the holes, looping the wire around the bottle spout or over plug and secure wire to both sides. Never fill a standard depth pot (drilled for drainage) more than halfway. Regularly check for saturated media. Never fill pots with wet media. Do not water seed or cutting pots and then overly handle them as this compacts the media and retards drainage. It is best to water pots after moving them to their long-term site.

### **PROPAGATION POT SELECTION AND USE**

Very few off-the-shelf "flower pots" today are designed for effective long-term good drainage that most native plants need. Most just have too few drainage holes or have holes that are too small or wrongly shaped. I can recommend a few fast-draining pots that are ready to use "as-is." These include the mesh-walled containers used for garden pond plants and some inexpensive kitchen colanders.

Open any drain spaces in mesh pots or colanders that may still be sealed with plastic. The garden pond section of chain store garden departments always stock mesh pond

pots — square, round or octagonal. Dollar stores carry inexpensive colanders.

My propagation pots look like Swiss cheese because they are filled with so many holes. I drill extra drainage holes in plastic pots with a plastic-capable 3/4-inch hole-saw attached to 3/8-inch corded drill, which maintains a constant fast speed longer than the rechargeable 18-volt drill I once used. Drilling clean drain holes in stiff, thick-walled plastic molded pots is pretty easy, but the thin-walled vacuum-formed ones required a lighter touch to prevent tearing. I also enlarge existing lower drain holes in pots to 3/4 inch.

In new or recycled plastic pots I drill new holes midway between each of the existing drain holes (if widely spaced) around the bottom side and make two more rows up the pot in an alternating pattern about 1/3 way up the pot. Drainage hole size should be as large as possible such that media does not run out of hole when watered. The 3/4-inch hole-saw seems the best. Hole-saws tend to fill up on the inside with plastic from holes cut. I just let the space fill up until there is space for one cut hole layer, which I peel away after drilling each hole. I want to invent a hole-saw bit that pushes out the waste plastic. A piece of foam rubber that compresses and rebounds inside the hole-saw cavity might solve this problem of waste build-up.

For planting seeds, cuttings, and plants I fill drilled pots about halfway or slightly above with media to form a final surface about two inches above the upper drain holes. I always seat pots on a pedestal or stand or hang them. The media level in low, wide pots can be 2/3 the height of the pot to full, but I do advise enlarging drain holes to 3/4 inch, adding drain holes between each of the bottom side holes and perching the pot off the ground.

For drilling plastic pots and domes the sharper the drill bit and the fresher the drill battery the better. You need plastic-capable hole saws in a 3/4 and 7/8 sizes. The 7/8-bit makes the vent hole in containers and bottles used for propagation domes (particularly the bottom half of 3-liter soft drink bottles). Plug the 7/8-inch hole with a white or black rubber 5/8 outside diameter chair foot. When making the hole-saw holes in thick Rubbermaid containers used for pots or domes, it is wise to drill a small pilot hole first using a 1/8-inch drill bit. For drilling vent holes in larger containers used as domes you will need larger diameter hole saws and larger rubber chair feet for removable plugs.

Drilling in thin-walled or brittle plastic pots and containers to create extra drain holes, or a vent hole, must be done with special care. Wear protective glasses and don't get into a hurry. Fill the pot first with firmly packed dense media to provide resistance against the spinning hole-saw drill bit. Drill slowly using a fresh, sharp hole-saw while applying light pressure (to prevent cracking and tearing). Drilling a 1/8-inch pilot hole (prior to hole-saw drilling) helps particularly well when converting plastic food containers to pots or domes. I often use this technique when I "rescue" too-wet plants by adding extra draining holes to the pot or making small drain holes larger.

I use flexible wire to make hold-downs for propagation domes and varmint caps on seed pots. New or used electric fence wire is perfect. Attach a hold-down wire to pot by making a hole in both sides near the top edge using a 1/8-inch drill bit or pocket knife awl.

Always use hold-down wires to attach domes to cutting pots and varmint caps to seed pots. Hanger wire from the hardware store works well for creating hanging baskets from plastic kitchen bowls and colanders, also for making a small shade cloth frame that you can stick into the ground.

### **PROPAGATION POTS ABOUND - MANY FREE OR INEXPENSIVE**

Keep your eyes open for plastic nursery pots and hanging baskets that have been discarded. The world is full of potential pots and propagation domes, sometimes in unlikely places.

I was once seeking some very large domes and pots for rooting some big-leaved species trees. At one bargain store I found a 6.5-gallon clear 1136 Sterilite clear trash can designed for storing children's toys, which made a perfect dome to fit in a 10 gallon pot I had. I drilled a 1-3/4 inch vent hole with a hole-saw in the top center of the trash can and plugged it with a 1-1/2 inch vent plug (rubber chair foot).

At a local car wash I asked about some empty translucent 20-gallon drums (one end with two screw caps/vents) which the manager gave me after I inquired and told him my plan. He also had some 55-gallon drums of the same material. I sawed the 20-gallon container in half to make two 10-gallon domes which fit nicely in a 20-gallon blue utility tub/pot, I found at a dollar store.

I create propagation dome-pots and seed pots called "high-rises" from used and new hanging baskets to place on a short pedestal just off the ground or hang in a tree or frame. Cuttings seem to root faster in aerial pots, due to greatly improved drainage, well aerated root zone and lighting from the sides. Several high-rise pots could be hung in a small area using a sturdy frame, shaded for cuttings, sunny or part shade for seeds.

Since most hanging baskets drain so poorly I remove the attached tray, enlarge existing bottom drain holes to 3/4-inch using a hole-saw and add one or two new rows of drain holes above in a staggered pattern. Unlikely pots sometimes work well, like a miniature hanging basket planter I found, drilled and added a dome made from the top half of 2-liter soft drink bottle. It rooted several 'Camp's Red' Cumberland azaleas which repotted successfully.

I also buy inexpensive plastic food colanders to which no additional drainage needs to be added. Use a 1/8-inch drill or pocketknife awl to make two holes for installing a wire "hold-down" for the propagation dome. To make the colander into a hanging basket just drill the three equidistant holes for the hanging basket wire.

The "colander pot" can be used either hung like a hanging basket or sitting on a pedestal just off the ground. If you use the colander pot, you can use a heavier media

than what I normally use and water it more often. Check the colander pot every other day. In normal dome-pots I just water once a week if it has not rained.

Propagation pots and domes can be made from all sorts of common household items. I once stuck dormant cuttings in a rectangular pot made from a "Rubbermaid® Latchable" in the 6.5-quart or 6.1-liter size. I drilled a pattern of good drainage holes in the box and used its lid for a perch. I attached two clear propagation domes made from half a 3-liter soft drink bottle: The domes fit perfectly side by side in the clear box with sufficient space between pot sidewall and dome sidewall for water to enter the media.

Rescuing pots in peril with rooted cuttings and small seedlings is a daily effort. Most of them are suffering from saturated media which is noticeable by plants dying or losing leaves in a pot, a pot feeling too heavy, earthworm castings plugging drain holes, weeds such as violets outgrowing the intended plants, and stunted plants with little vigor. Such pots can often be rescued by repotting the plants in proper media and pot, by drilling extra drain holes in the pot or by removing the bottom half or third of media from the pot to speed drainage.

### **RECORD KEEPING**

Identification tags that remain readable and are long-lasting are essential for both seed and cutting pots. Label each pot of cuttings, plants or seeds with "pencil-writable" metal or plastic ID tags stating what is planted, who provided it and date planted. I press tags into the media along pot sidewall to hide them. Two labels are often better than one.

I also keep a pocket notebook and old mailing labels with dates and plant material received. Used or new metal offset printing plates are the longest lasting material as I have some plants labels from layers dating to 1983 which are still quite readable with pencil writing.

Never use vinyl mini-blinds for plant tags as they fade quickly. Old aluminum blinds work. Seek similar materials in your area. Some waste plastics from businesses like credit card manufacturers work well as labels and are erasable and reusable.

*Mike Creel's first loves are his family followed by the two family felines, but after that, he turns "green," venturing to a 7-acre native garden and the wilds of South Carolina to propagate, preserve, and share every worthy native plant he encounters. He considers propagation a critical tool of native plant conservation. A 1977 University of South Carolina journalism graduate, he recently retired from state government as writer and photographer on environment and natural resources. Through workshops, web correspondence and U.S. mail he shares his simple propagation techniques and plants with people across America and abroad.*