

Propagating Plants from Stem Cuttings

Reference: Texas Master Gardener Handbook/Chapter Four/Plant Propagation/Stem Cuttings

Propagating plants from cuttings is one of the easiest and most used methods of propagation. Using this method of propagation, you are cloning the plant and will result in an exact match of all of this plant's characteristics.

Materials Needed

1. Pot(s) of pre-moistened soil-less rooting medium, consisting of equal parts of perlite, vermiculite, coarse sand, and sphagnum peat moss
2. Popsicle stick or identifying label for plant information (plant id, date started) with sharpie or lead pencil
3. Pruners or a sharp knife
4. Rooting hormone & plastic cup
5. Pencil or other sharp pointed object (dibble), slightly wider than the stem of the cutting
6. 1 gallon Zip lock bag or a clear soda bottle with bottom cut out
7. Coffee filters or cup cake liners (for bottom of the pot before filling with rooting media)

The Rooting Media – Equal Parts by Volume

1. Vermiculite – silicate of magnesium-aluminum-iron, that is expanded by high temperatures to increase water & nutrient holding capacity
2. Perlite – a natural volcanic rock that is heated under pressure until it explodes like popcorn. It does not hold much moisture but does serve to prevent soil compaction
3. Coarse River Sand – allows for sufficient aeration unlike much finer beach sand
4. Peat Moss – the organic component of this mixture but low in fertility

Cuttings

1. Glove-up
2. Cuttings should be between 4 and 6 inches long
3. Cuttings should be taken in the morning when possible
4. Fresh cuttings should immediately go into water (willow water if available)
5. Sterilize knife or cutters between plants so as not to avoid possible contamination
6. Avoid using a flowering stem
7. To avoid confusion, the bottom (nearest the root) should always be identified by an angled cut

Cutting Preparation

1. With a knife or pruners, cut diagonally just below where a leaf attaches to the stem (the node)
2. Remove the lower leaves but leave the top two or three
3. Scraping back the outer layer at the bottom of a woody stem will help promote root formation
4. Cover prepared area with rooting hormone
5. The cutting is now ready

Make holes in potting mix

1. Use a sharp object such as a pencil or dibble to make a hole in the potting mix.
2. Make the hole larger than the cutting so the rooting powder is not rubbed off

Don't contaminate your rooting hormone



1. Do not stick cuttings directly into the original container of rooting hormone. The moisture on the cutting will degrade the remaining hormone in the container.
2. Pour just the needed amount of rooting hormone into a separate container, such as a plastic cup and reseal the original hormone container to keep it fresh.

Dip the cutting

1. Dampen the cutting to help the hormone powder stick
2. Dip the prepared cutting in the rooting hormone and swish it around to lightly cover the bottom (1 to 1 ½) inches of the cutting. Dispose of excess rooting hormone.

Insert your prepared cuttings into holes in the rooting medium

1. Stick the cutting in the rooting medium being careful not to rub off the rooting hormone powder
2. Gently press the medium around the cuttings to provide good contact
3. More than one cutting can be placed into a single pot, however crowding can result in mold and rotting.
4. After the cuttings have rooted they can be divided and potted in separate pots

Water

1. Water sparingly since you have already dampened the rooting mix.
2. Willow water tea can be used, if available.
3. Willow water tea is made by steeping the young green limbs of any variety of willow tree (*Salix* [Willow] genus) in warm to hot water. This tea provides two important chemicals; Salicylic acid (SA) which helps plants to fight off infection & Indolebutyric acid (IBA) a natural plant hormone that stimulates root growth.

Place in a brightly lit, warm area, out of direct sunlight

1. To maintain humidity and moisture, place the prepared cutting in a terrarium type atmosphere, either a zip lock bag or under a soda bottle
2. Inflate the bag to keep the sides of the bag away the cuttings as much as possible.
3. If using a plastic soda bottle, the lid should be screwed on

Watch your cuttings

Examine the cuttings weekly to make sure the rooting medium is not drying out. When rooting has taken place (about 3 weeks for tender cuttings like begonia. Harder stem plants will take longer), separate the cutting and pot them in individual pots.

The information in this handout was compiled by Texas Master Gardener Monty Anderson, Propagation Specialist

Outline for Rose Propagation using a Mason Jar

October 26, 2020

Intro - Welcome to the LGMG Demonstration Garden and the EarthKind Rose Bed.

My Name is Sherrill Czarnecki. I am a LGMG. I will be demonstrating on how to propagate roses using a Mason Jar.

EarthKind is a special Designation given to a select cultivar by the Texas AgriLife Extension Service through the EarthKind Landscaping Program. The designation is based on the results of extensive research and field trials and is awarded only to those roses demonstrating superior performance.

This area of the garden was initial a EarthKind rose trial. It was then developed into what you see today. There are EarthKind Roses and rose cultivars that are undergoing trials.

Propagation - You can propagate roses anytime of year, but my favorite time to propagate is during October. The plants have soaked up a lot of energy from the sun and the plant is the healthiest. Select a healthy specimen with the characteristics that you want. We will be using Belinda's Dream which is an EarthKind rose. This rose has been hard pruned in the spring and pruned again in August for a fall bloom. The rose has 100 petals and has a straight stem which is good for bouquets.

Preparation - Water the rose to a depth of 4 inches the day before. We had a 3-inch rain this weekend, so that will work for our purposes. Watering will ensure that the cutting is fully hydrated. Once it is cut it will be more difficult to hydrate without roots.

Materials -

- Digging tool
- Potting soil
- By-pass pruner
- Gloves
- Bleach solution or Clorox wipes
- Label
- Paint pen
- 1 gal ziploc bag with water or jar
- Rooting hormone
- Small container for rooting hormone
- Mason jar

Cuttings - Use gloves. Grab a spent bloom and follow it down the stem about 8 to 10 inches, cut it just above a leaf node. Do no harm to the mother plant.

Trim up the stem to make the cutting. Each node has meristems or undifferentiated cells. They can grow into a bloom, a leaf or branch, or into roots. We are going to re-message the meristems in this cutting. Terminal node is cut off to signal the cutting to spread out through the other nodes. Pull off lower leaves exposing the bottom 2 nodes. Trim back leaves on the upper nodes so that cutting will fit under the Mason jar and lessen the moisture requirement on the cutting, remember we do not have any roots yet. I usually end up with 4 nodes. Cut the base at a 45 degree angle just below up slightly into the node.

The rooting hormone will be added to the trimmed lower node to signal the cutting to put down roots. Stick the cutting into water.

Prepare the soil - dig a hole about the size, or a little less than the Mason jar. This should be on the North side of the mother plant. Sunlight can heat up the jar and kill the plant. Fill with potting soil and water well. Using a dowel or sharpie, measure the depth of the cutting that will be inserted into the soil. We will be using the dowel to make the hole where the cutting will be inserted. We do not want the rooting hormone to be rubbed off and we want the cutting to rest at the bottom of the hole.

Stick the cutting - Pour some rooting hormone into small jar. Take cutting and dip it into the rooting hormone, knock off excess hormone. Carefully place cutting in the hole, avoid scraping off the rooting hormone. Press soil up against the stem. Place the Mason jar over the cutting, pressing down hard so that it won't tip over. Water well around the Mason jar. You do not want to water the stem cutting directly because that would remove the hormone. Mound up mulch around the jar, this can help avoid too much heat or too much cold.

Maintain - Keep the soil around the jar moist. Hopefully rains will take care of this for you. When the weather gets cold, row crop cover can be used to shelter the new plant. I sometimes use Christmas tree lights. Look for new growth. Your new plant should be ready to transplant in March. Carefully dig around the plant lifting it. Place in 1 gallon pot in potting soil with built in fertilizer. Your plant should be ready to plant in the garden within 6 weeks.