Propagating Roses (or Other Woody-Stem Shrubs) from Cuttings

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1. Concept

Roses have been propagated using various methods over the centuries. One of the oldest methods is by cutting sections of the stems (canes) and inserting them in soil or some similar substance, with the hope that these severed stems will sprout roots and grow into new plants. As history has proven, it works … but not always. Give some modern knowhow, we can increase the odds of a successful rooting.

This method does work for other woody-stem shrubs but we are going to concentrate on roses.

2. Materials & Tools

a. Materials

i. Container/bag/pot

1. You need something to hold the rooting medium. We will use ZipLock bags but one can also use pots or trays. Trays or pots should drain easily. Add holes (with a drill) to any (plastic) container that does not drain easily.

ii. Rooting medium

1. I use a 50/50 mix of coir (shredded coconut husk) and perlite (a light-weight volcanic stone).

2. What you want is a non-nutritive mix that will hold moisture while supporting the plant. It needs to be non-nutritive for two reasons:
    a. You want the plant to go looking for food (and therefore grow roots)
    b. Nutritive material will also grow pathogens that can kill the cutting before it gets a chance to grow roots.
3. So. **do not use potting soil.**
4. Other mixes that can be used:
    a. Peatmoss instead of coir….I like coir because it is a byproduct of growing coconuts. Peatmoss, on the other hand, is "mined" in peat bogs, and peat bogs take centuries to regenerate.
    b. Vermiculite or large-grain sand (sharp sand)/very fine gravel.

iii. Cover (if using a pot or pan)

You need something to hold in the moisture and create a "greenhouse" environment. Clear soda bottles, Milk jugs, other large bottles that are clear or translucent. It needs to allow light in. Cut off the bottom to make a "bell jar" type apparatus.

iv. Rooting Hormone (more later)

v. Candle or Elmers glue

1. Sealing the the top of the cane helps keep the cane from drying out. It also prevents pathogens from invading from the top.

vi. labels/markers

These are tags or markers you insert in the soil so you know what you are growing. White plastic knives (like you would use at a picnic) are pretty good… they are sturdy and have a broad space on which to write with a Sharpie… and hold the ink quite well to resist fading.

b. Tools

i. Pruners

These are one of the primary tools of a rose grower. They need to be sharp and clean. You want Bypass pruners that cut the stem rather than

crush the stem: (Anvil or Bypass Secateur (Pruner) - which is best? - Garden Myths)

ii. Jug of water

You will need to wet the rooting media and keep the prepared cuttings hydrated. Use tap water rather than rain water… rainwater is more likely to have bacteria and other microorganisms in it.

iii. Container(s) for collecting and holding the cuttings

A jar with water, or ziplock bag with a soaking-wet paper towel in it. You want to keep the cuttings hydrated.

iv. Short blade pocket knife or paring knife (cheap ones work fine)

You want something that is easy to handle to cut/injure the bottom of cane to encourage it to grow roots and as a place for the rooting hormone to interact.

v. Sharpie (fine tip if you have it)

A black Sharpie or other permanent marker … Use to mark the ziplock bag or label/tag with the variety and date so you can keep track of your plants

vi. Notebook

I recommend keeping a notebook of some type to record what you have tried and keep track of what worked or did not.

vii. Several empty plastic bins/buckets/tubs (for making/mixing/hydrating the rooting medium)

You need SOMETHING to mix the stuff in….

viii. Leather gardening gloves

You want pretty heavy leather gloves.. Roses has thorns (well, actually very big prickles) and they will go through fabric gardening gloves.

Side note: If you are going to be working with roses a lot, keep your Tetanus shot up-to-date (they say a shot will give protection for 10 years but I like to do it every 5 years or so). The tetanus bacterium is prevalent in soil and can enter through breaks in the skin,,,,like from rose thorns. Roses Bite!!

ix. Plastic drinking straw

This is for inflating the ziplock bag at the end, if you are using the bag method…. It is a whole lot easier than trying to blow into the corner of the bag and it prevents you from coming into contact with any rooting hormone that might have come off as you put the cutting in the bag,... plus you don't get dirt/rooting medium in your mouth…

x. When you use rooting hormone, you want to dispense a small amount for that day's use, so you need cheap disposable things… because you WILL putting all these things (including any rooting hormone powder that is left over) in the trash when you are done…. You don't want to reuse any of these things

1. Small soft-bristle paint brush (like used for stenciling or kids paint bushes)
2. Small disposable dish (condiment cup for takeout, cap from a milk jug, jar lid)
3. Plastic spoon or knife
4. Dispo gloves

3. A word about rooting hormone

i. Safety

1. READ THE LABEL ON THE BOTTLE
2. Don't breath it or ingest it
3. Don't get it on your skin
    a. If you do, wash it immediately

ii. Types

1. **Powder**
2. Gel
3. Liquid (mix & soak)

iii. Active ingredient (indole-3-butyric acid (IBA)) concentrations

1. 0.1% IBA: Easily-rooted/soft-wood/herbaceous cuttings
2. **0.3% IBA: Semi-hardwood cuttings (roses)**
3. 0.8% IBA: More difficult-to-root woody plants, hardwood cuttings

iv. I recommend powder

1. Long shelf life
2. Good for small numbers of cuttings at a time.

b. Setting up for use of the rooting hormone

i. Don't use around food or where food is prepared
ii. Good ventilation but not so the powder blows around
iii. Before opening the rooting hiormone, put on the rubber gloves
iv. Put newspaper or either scrap paper under the dispo dish
v. Use dispo spoon to dispense a 1/4 of a spoon into the dispo dish
vi. You will be using the brush to apply rooting hormone to the bottom of the cutting.
    1. Do not put any leftover powder back in the jar (it will contaminate the rest of the jar.
    2. When done, carefully dispose of the dish, paintbrush, and paper underneath.

4. The Process

a. Harvesting cuttings

i. What makes a good selection for harvesting as a cutting?
    1. Semi-hardened
        a. It should be slightly flexible and, preferably the thickness of a pencil… but the diameter of the cane is also very dependent of the size of the bush, size of the other canes on the bush.
            i. If it can be easily bent without breaking, it is too young
            ii. If it is so stiff it will not bend without breaking, it is too old. (It still might root but it will be harder and will take longer)
        b. What you are generally looking for on OGRs (Old Garden Roses) is last year's wood or early from this season
            i. Dark green stem or just starting to develop bark but not fully barked

c. Clear leaf nodes
d. No fungal disease (no blackspot on the cane)
e. If there are any flowers or hips, they get trimmed off.
i. Generally, any cane that recently had flowers will probably be too young (Modern Hybrid Tea/Grandiflora/Floribunda roses are a bit of the exception.)

2. About the thickness of a pencil (but depends on the variety of the rose)

ii. If going to "stick the cutting" right away, put the bottom of the cutting in a container of water….

iii. If you are going to "stick the cutting" later (hours to days later)

1. Take a quart or gallon ziplock freezer bag and label it with the variety
2. Put a soaking wet paper towel in the bottom of the bag
3. If the whole cane fits in the bag, great,. If not, you may need to do some of the prep at harvest time.
4. Keep specimens cool and hydrated (between 50 and 75 F)
a. Not on ice or in a fridge

b. Preparation

i. Collect your tools and materials

ii. Prep the medium you will use

1. You want the rooting media to be very damp but not dripping wet. If you grab a handful and squeeze it firmly, water should squeeze out around your fingers but not so wet that it drips without squeezing.

c. "Sticking the cuttings"

i. Cut specimens to lengths with 4-5 nodes (with a node right at the bottom)

ii. Remove any leaves from the bottom 3 nodes

1. You can remove all the leave is you want

iii. Seal top cut
    1. Elmer's glue
    2. Wax
iv. Label bag with variety name and date (and anything else of note)
    1. I suggest one variety per bag else inserting a tag for each cutting.
v. Fill ⅓ full of moist medium
    1. Press it down a little bit
vi. Score base of cutting with a knife
vii. Apply rooting hormone with a disposable paint brush
viii. Use a pencil or the like to make a hole in the media
ix. Stick the end with root hormone in the hole the compress the media around it
x. If not using a bag, put a label stick with the cutting.
xi. Repeat from “scoring the base” with another specimen if you want.
    1. If you left leave on the cutting, you can’t put as many specimens in a bag
    2. I get 3 to 4 specimens in a 1 gallon ziplock
xii. Inflate the bag
    1. Zip the bag mostly closed with the straw extending out the unsealed end
    2. Us the straw to inflate the bag then quickly remove the staw and seal the bag.
xiii. Place bag in a shady spot
    1. It should get plenty of indirect light but no direct sun
xiv. Check every couple of days and re-inflate if necessary
    1. You want to see some condensation on the inside of the bag or bottle. This shows that there is sufficient moisture inside.
xv. If going into fall or winter, it will take longer and you want to keep the cuttings from freezing.

5. How long does it take ?

a. It depends on the temperature and the plant
b. Plan on at least 8 week but probably more like 10 to 12 weeks.

c. Good signs:

   i. It starts sprouts more leaves

      1. However, new leaves does not actually mean there are already roots. There may have been sufficient energy the cutting itself to allow it to develop more leaves.
      2. That said, if it is producing a significant amount of new growth, that is a very good sign that it now has roots.

   ii. You see roots through the side of the bag This is exactly what you are looking for.

d. Bad signs:

   i. The cutting turns black

   ii. The cutting shrivels (you can see wrinkles in the surface of the cutting)

   iii. Visible signs of fungus

e. If you start with leave on the cutting and they end up falling off, that is not necessarily a signal of failure.

f. **Resist the urge to give the cutting a tug**…. Doing so may break what roots have been forming. Some sources suggest testing this way but I think it does more harm than good. Patience is your friend… As long as it doesn't look like it is dying, give it more time….It may be that it is taking a long time….

6. Ok, it worked! I see roots/ it's growing!

a. Hardening off the cutting

   The cutting has been growing in a warm moist environment so you want to get it conditioned to the outside environment. This is a gradual process…

   i. Open the bag a little (say 2 in) and let there be some \air exchange. If using a bottle, that has a cap, take off the cap for a period of time.

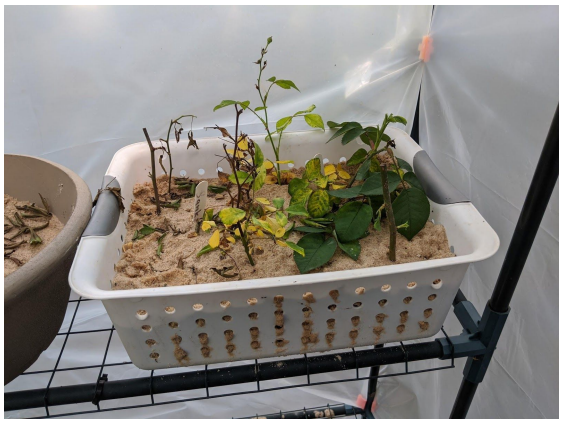
   ii. Start with 10 minutes at a time for a couple of days. Gradually increase the amount of time over a week or two until it is open all the time.

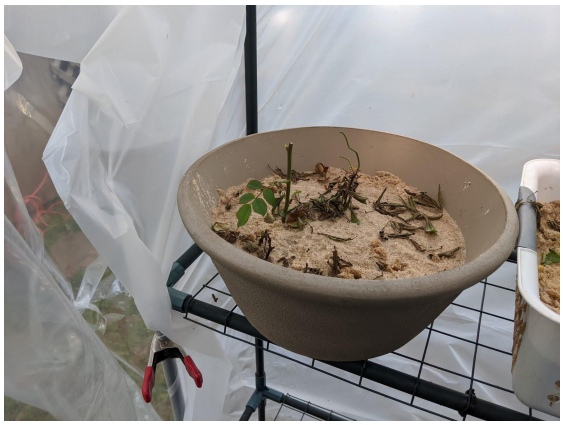
   iii. You should still see condensation on the inside of the bag or bottle after you seal it back up. If not, spray the cuttings and the surface of the medium with a fine mist of water to the point where both look damp then reseal. Check back later for condensation.

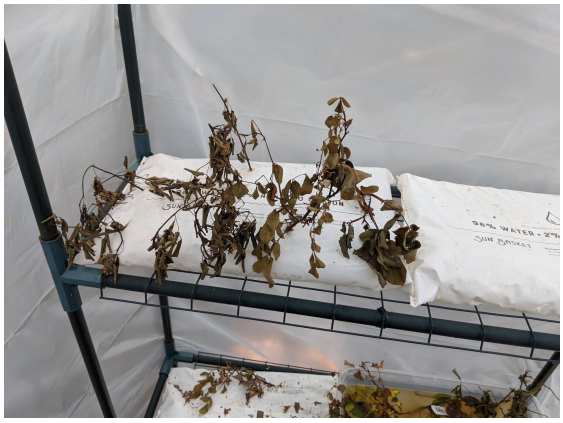
b. Once you have the cutting(s) to the point where they are uncovered/bag is open all the time for a couple of days, it is time to transfer rooted cuttings to a new pot with real potting soil

7. Potting a cutting
    a. I generally use a 2 qt or 1 gallon pot
    b. Use NEW potting soil from an unopened bag….Open bags may have gotten infested with fungus spores.
        i. The potting soil should NOT contain any additional inorganic/chemical fertilizer, if at all possible.
        ii. If you have no choice, you can add extra fresh rooting medium to the potting soil to “dilute” it… between 50./50 to 75/25 potting soil and rooting medium.
    c. Take enough potting soil to loosely fill the pot and put it in basin/bucket
    d. Add water to moisten the potting soil
    e. Fill the pot about ⅓ to ½ full of loose moist potting soil … you want it sof a handful will hold together after being formed into a ball but not to the point that it drips water
    f. Reach in the bag and scoop out the whole cutting, rooting media, roots and all.
        i. I generally use both hand to scoop around the medium so that the new plant is complete supported by your hands around the medium.
    g. Place the root ball in the pot and fill around the plant with more potting soil
        i. The objective is to have the soll level in the pot end up matching the level of the rooting mix where the cutting was rooted.
    h. Give the new potted rose a good watering so the soil settles in the pot. Water should drain from the pot.
    i. Transfer the tag/label or insert a newly written tag/label (plastic knife?) into the pot with the rose.
        i. I can’t tell you the number of times I have potted up a rose and then forgotten what variety was in the pot. Once you have potted up a lot of newly-rooted plants, all the pots start looking alike.
    j. Keep the new potted rose watered. Soil should be slightly damp and the pot should drain and not sit in water.

8. Examples of failures







9. Additional Resources

- Amazon “wish list” of suggestions and examples of tools and materials https://www.amazon.com/hz/wishlist/ls/3D5B6W1LM6D95?ref_=wl_share
- “Rose Rustling Etiquette from “The Texas Rose Rustlers” http://www.rkdn.org/roses/etiquette.asp
- Patents on Plants last 20 years. It is not legal to propagate any patented rose without a license from the owner of the patent (not the owner of the plant).

- Note: No period rose is under patent and most Old Garden Roses are not either.
- How to tell if a rose variety is still under patent:
  - Look up the variety in a book, catalog, or a website like http://helpmefind.com/roses
  - You are looking for the “Registration Name” which is generally in the form XXXyyyyy, where XXX is all caps and represents the name of the hybridizer or the company that registered it and yyyy is lowercase and represents a unique letter code for the plant. Here are some examples:
    - Single Knockout: RADrazz
    - Double Knockout: RADtko
    - Gertrude Jekyll by David Austin: AUSboard
    - Gallicandy (a Gallica rose): ARDtuscoth
  - Search for the the registration name on https://patents.google.com
    - RADrazz is expired as of 2019
    - RADtko is still under patent which expires in 2024
    - AUSboard patent expired in 2008
    - ARDtuscoth does not appear to have been patented, probably because it is an OGR.

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