Free (and mostly free) plants - Propagation methods for fun

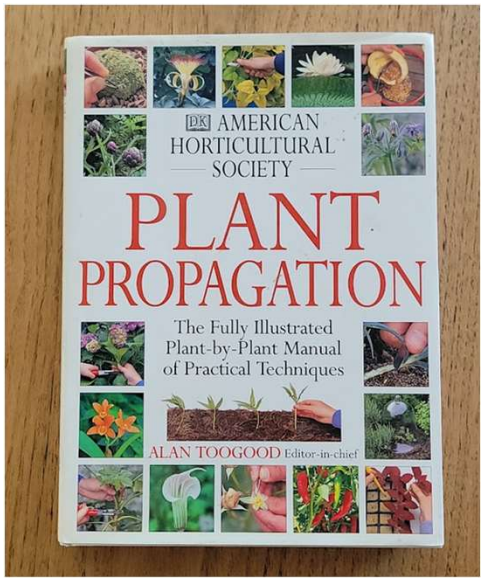
HELLO
MY NAME IS...
Plant Killer

Propagation Guarantees

- So you want to propagate?
- There is only one guarantee – you will have failures
- The only guarantee to have zero failure – don't even try
- Don't give up - keep trying!

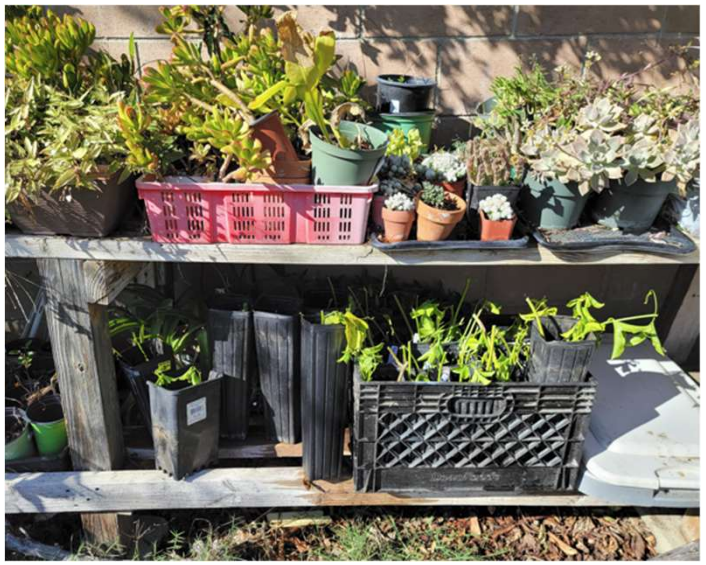
Resources

- There's no way you can remember EVERYTHING!
- A good resource is one you can trust
- American Horticultural Society (https://ahsgardening.org)
- Kew Gardens (www.kew.org)
- Daves Garden (https://davesgarden.com)
- CRFG!! (But not me.)
- Experience and personal notes



Common propagation methods:

- Seeds
- Division/roots
- Cuttings
- “Other”
  - Cactus/succulent
  - Leaf clone
  - Air/soil layering
  - ~~Other~~
    - ~~Spores~~
    - ~~DNA~~

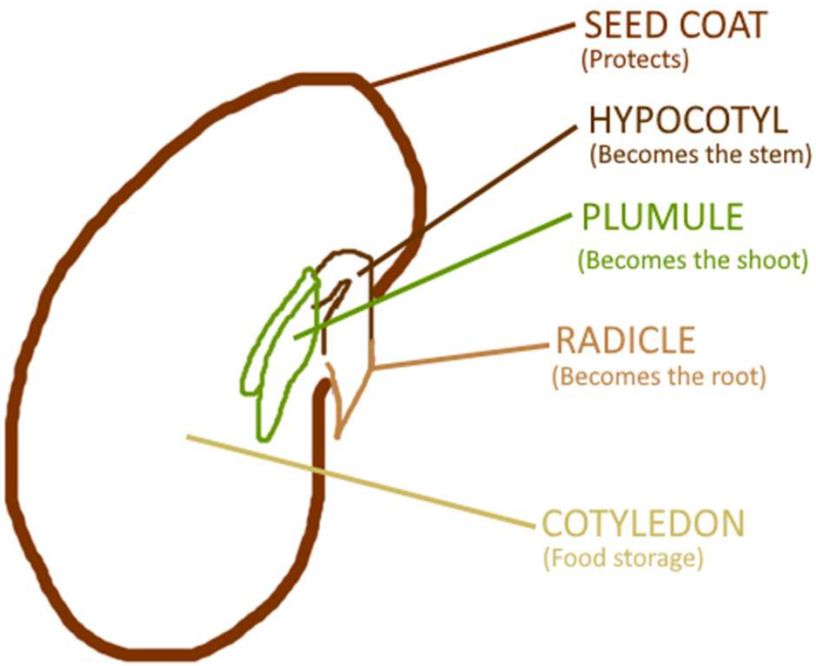


Sexual propagation

- Some people have dirty minds
- Dirt is a GOOD thing here!
- Seeds
- Grow in/on flowers/fruit
- Viability varies
  - Dry seeds = longer storage

Seed “naughty bits”

- Coat = protection
  - May need to be soaked to soften
- Plumule = new plant
- Hypocotyl = first leaf
  - Often looks different from “adult” leaf
- Radicle = new root
- Cotyledon = Food
  - Seeds can run out of food
  - https://en.wikipedia.org/wiki/Oldest_viable_seed (2000-year-old Judean date palm from Masada)



What do SEEDS need?

- Moisture
- Food
- Temperature
- Light
- Stratification?!?

Easy starters: gives confidence

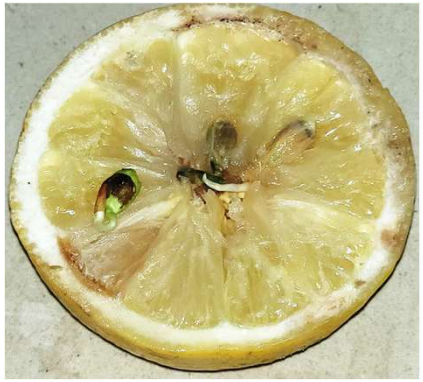
- Radish
- California poppies
- Avocado
- Dragonfruit!!

SEED Secrets

- Moisture = humidity = clamshells
  - A nice bath helps soften hard seeds
- Food = fertilizer
  - Not too much Nitrogen!
- Temperature
  - Start indoors, gradually get used to outdoors
- Light/grow light
- Stratification = get your timing right!
- Direct sowing
  - Read the package
  - Verify with a second source just in case

SEED Sources

- Packaged/purchased
- Directly from a plant
- From the grocery store/pre-sprouted produce
- Seed swap group
- Other?



“Not-seeds”: Corms, bulbs

- Need the same thing as seeds
  - Moisture
  - Food
  - Temperature
  - Light
  - Stratification (tulips)

Easy starters: gives confidence

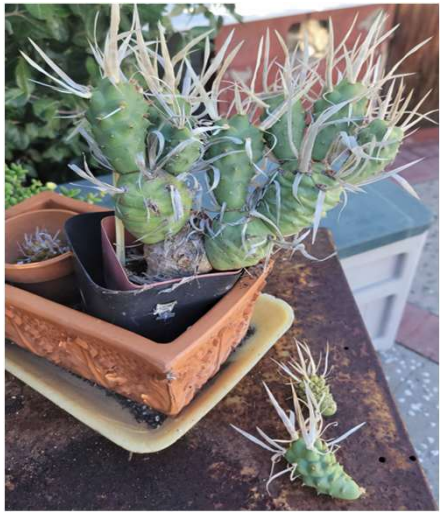
- Squill
- Crocosmia

Division

- Help! It's crowded in here!
- Makes healthier plants, more room for roots
- Bonus: free plants!

Cactus/Succulent Propagation

- Almost any part works!
- Cut, dry, and plant
  - Stems
  - Leaves
  - Adventitious buds

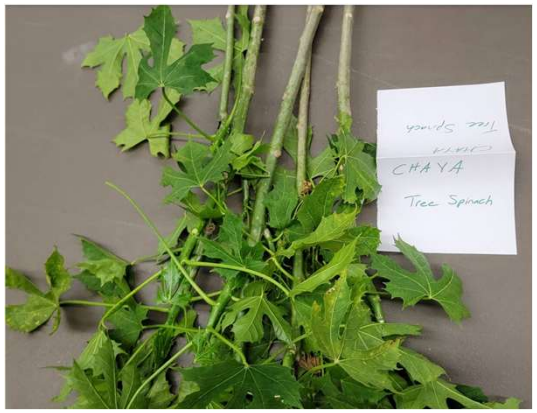


Easy starters: gives confidence

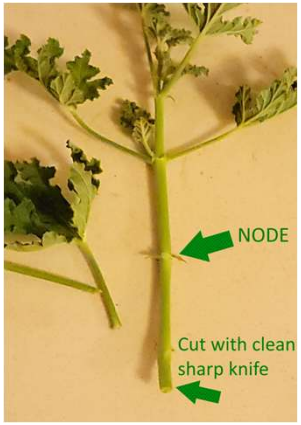
- Kalanchoe
- Jade
- Thimble/fingernail cactus

Cuttings

- Softwood
  - First flush of grown in spring
  - High rooting potential, but low survival rate (lose water quickly)
  - Root in water
- Greenwood
  - Firmer stems, easier to handle
- Semi-Ripe
  - Buds begin to develop
- Hardwood
  - Cut from dormant plants
  - Best in planting medium (sand, dirt)



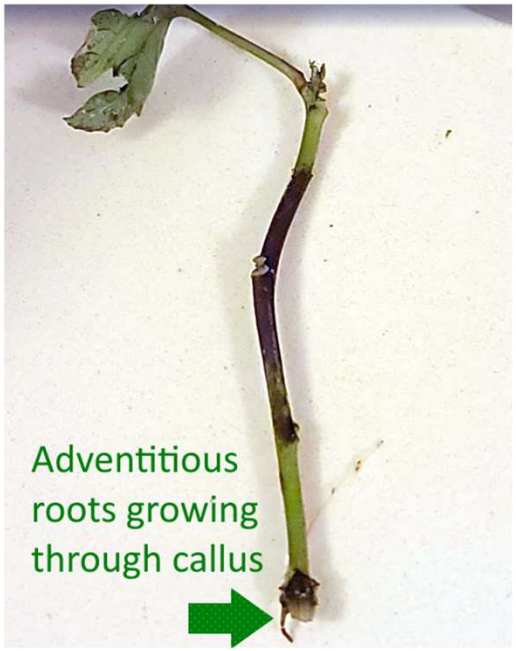
Cutting preparation



NODAL CUTTING:
Growth cells are concentrated at leaf joints (nodes) so must cuttings are trimmed just below a node to optimize root formation.

WOUNDING:
A cutting from semi-ripe or hardwood scions may root more readily if the bark is cut away at the base. This exposes more cambium.

HEEL CUTTING:
Some cuttings, especially semi-ripe wood, are taken by pulling away a small side shoot so it retains a "heel" of bark from the main shoot. The "heel" exposes extra cambium, like a Wound cutting.

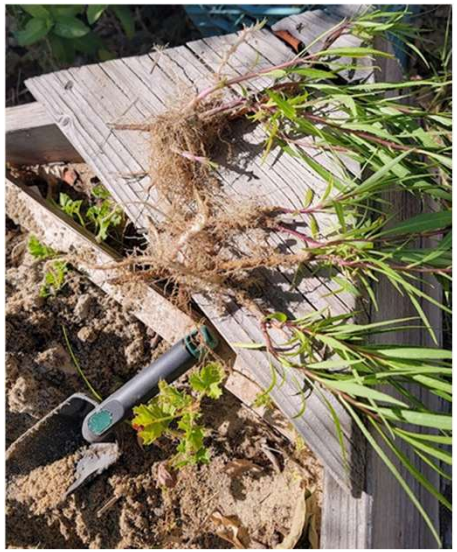


CALLUSING:
When a stem is cut or wounded, it may try to protect itself with callus tissue. If the callus gets too thick it prevents root growth. If this happens, pqare away excess callus with a scalpel.

Excerpts from: Plant Propagation by American Horticultural Society

What do CUTTINGS need?

- Roots usually grow from nodes
  - Root in water
  - Root in dirt
  - Root in sand
  - Rooting hormone (maybe)
- 3 nodes, bury 2



- Easy starters: gives confidence
  - Mint
  - Purple heart/pothos
  - Sweet potatoes
  - Figs/grapes/pomegranates

What do you need to CLONE A LEAF?

- Healthy leaf
- Rich, loamy soil
- Humidity (clamshell)
  - Very little water needed inside a clamshell
- Time

Easy starters: gives confidence

- African violet
- Peperomia
- Begonia

Adventitious Roots - Layering

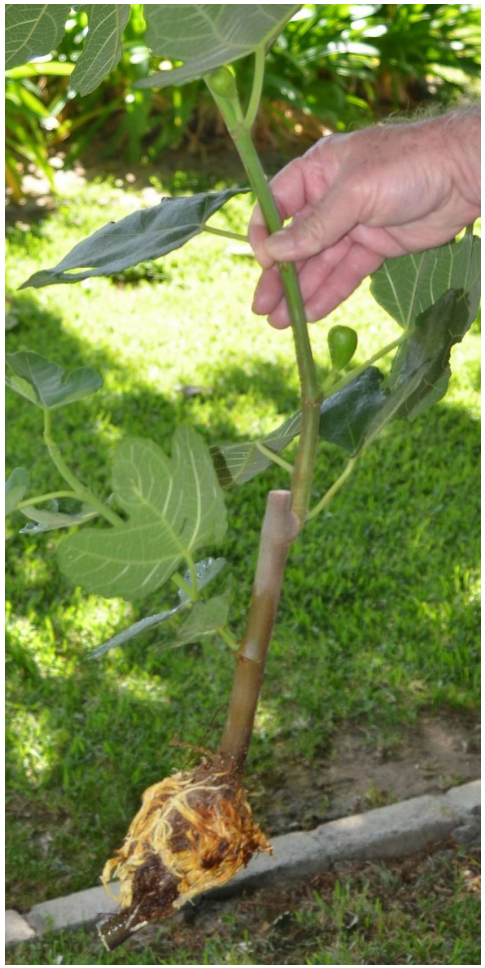
- Grow roots before planting
- Natural layering
- Tip layering
- Air layering

Easy starters: gives confidence

- Strawberries
- Sweet potatoes

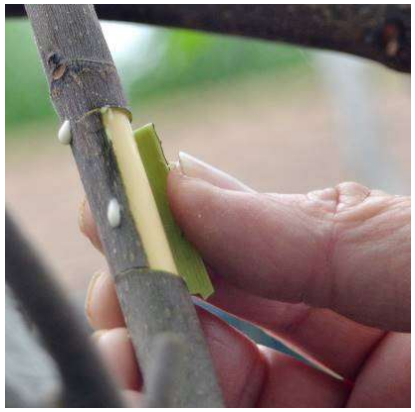
What does AIR LAYERING require?

- Healthy cambium
- Rooting hormone
- Humidity
- Protect from sun
- Time



HOW TO AIR LAYER

- NEED:
  - sphagnum moss,
  - plastic bag(s)
  - aluminum foil
  - String
  - knife or razor blade
  - rooting hormone.



- PREPARE: soak moss in water overnight
- SELECT: straight branch
- CUT: bark about 1 – 2”
  - Cut the bark but NOT the heartwood
  - Cut >3” from where branch joins tree

- PEEL: all bark off the heartwood
- SHAVE: off all cambium VERY thoroughly.
  - Leave no trace of the green cambium layer or you might not get any roots.

AIR LAYERING

(Continued)

- MAKE A PASTE: of rooting hormone and water
  - ~1/1 ratio, thick as toothpaste
  - Paste sticks to the shaved branch better
- APPLY PASTE:
  - Onto exposed heartwood
  - Onto the sliced bark above and below
- WRAP #1: about 2 – 3 hands of soaking-wet moss
  - Do not wring out the moss, leave it wet!
  - Tie plastic bag at top and bottom.
- WRAP #2: aluminum foil
  - Keep the sun out, prevent tears in the plastic wrap
  - Leave the top of the aluminum foil pinched closed but not too tight, so you can check for moisture later.
- WRAP #3: a second plastic bag , but loosely

AIR LAYERING

(Continued)

- CHECK: is the moss is still moist?
  - Check at 1 week, then randomly after
  - Add a little water and repeat as needed
- WAIT: until the bundle feels “Hard”
  - Roots are filling in!!
- CUT: a few inches BELOW the root-ball
  - After root ball is solid
  - Extra stem will help support the new plant
- WASH: gently remove all the moss
- PLANT: use growing medium with perlite
- WATER: keep soil moist
  - Don’t forget to label the plant!!
- WAIT: Leave it potted for about a year

Photo taken about 1 month later

Photo taken about 1 month later

Photo taken about 2 months later

Rooting methods

- Hormones or not?
- Sandbox
- Cup o’ water (watch out for mosquitoes!
- Directly in the dirt

One last thing – about patents

- Someone else worked hard to develop the new variety

> In the case of a plant patent, the grant shall include the right to exclude others from asexually reproducing the plant, and from using, offering for sale, or selling the plant so reproduced, or any of its parts, throughout the United States, or from importing the plant so reproduced, or any parts thereof, into the United States.

- Plant patents last 20 years
- Trademarks and copyrights protect brand names
- US Patent search:
  - https://patents.justia.com/patents-by-us-classification/PLT
- OC CRFG online list (not comprehensive):
  - https://southoccrfg.org/patented-plant-list/
- Easier search: https://patents.google.com/
  - Search for the fruit variety (in quotes)

patents.google.com/patent/USPP17827P2/en?q=("cot+n+candy")&oq="cot+n+candy"

Interspecific tree named 'Cot-N-Candy'

Abstract

A new and distinct variety of interspecific tree. The following features of the tree and its fruit are characterized with the tree budded on 'Nemaguard' Rootstock (non-patented), grown on Hanford sandy loam soil with Storie Index rating 95, in USDA Hardiness Zone 9, near Modesto, Calif., with standard commercial fruit growing practices, such as pruning, thinning, spraying, irrigation and fertilization. Its novelty consist of the following combination of desirable features:

1. Regular and productive bearer of medium size fruit.
2. Vigorous, semi-spreading tree growth.
3. Fruit having very good flavor and eating quality.
4. Fruit with white flesh.
5. Fruit with an attractive reddish pink blush.

Images (1)

Classifications

A01H5/08 Fruits

USPP17827P2
United States

Download PDF | Find Prior Art | Similar

Inventor: Gary Neil Zaiger, Leith Marie Gardner, Grant Gene Zaiger

Current Assignee : Individual

Worldwide applications

2005 • US

Application US11/314,466 events

2005-12-22	• Application filed by Individual
2005-12-22	• Priority to US11/314,466
2007-06-26	• Application granted
2007-06-26	• Publication of USPP17827P2
2007-06-28	• Publication of US20070150989P1
2026-01-18	• Adjusted expiration
Status	• Expired - Lifetime

Where can you get more FREE PLANTS?

- Friends & neighbors
- Yard sales
- Nurseries
- Your refrigerator
- CRFG (including me!)
- Other…???