Growing and Enjoying Succulent Plants
By Daedre McGrath, Trial Garden Manager, MSU Horticulture Gardens

What is a Succulent?
- **Succulent**: plants that store water in fleshy stems and leaves for use during the dry season
  - Many different plant families represented
- **Cactus**: also plants that store water, but have prickly or hairy coverings and lack leaves
  - All cacti are in family Cactaceae
  - All cacti are succulents, but not all succulents are cacti
  - Both have a thick, protective “skin” to reduce water loss from evaporation
    - Exceptions: Some succulents lack leaves/have spines, and some cacti have leaves/lack spines

Why Grow Succulents?
- Advantages over traditional houseplants:
  - Require little water and fertilizer
  - Unique and interesting colors and textures
    - Many have a powdery bloom (called farina) that gives them a silvery coloration
    - Some will flower, but mostly grown for their foliage, stems, or thorns
  - Easy to propagate, multiply, and share! A fun way to spread the plant love!
  - With proper care, plants can become life-long companions
- Disadvantages:
  - Require bright light to be happy and healthy
    - Can acclimate to lower light levels
    - Can add supplemental lighting
  - Can “kill them with kindness”

How to Grow Succulents:
- Growing Conditions:
  - **Light and Temperature**
    - Put them in the brightest spot you can provide
      - Can become leggy or stretched-out if light levels are too low
    - Indoor succulents may not exhibit the same coloration as succulents grown outdoors
      - Ultraviolet light can enhance the production of red and purple pigments in succulents
      - Window glass filters out most UV light
  - **Temperature**
    - Happy at normal room temperature (65-75F)
    - Will dry out faster in a warmer house, and dry out slower in a cooler house
    - Cool temperatures (like below 50F), can also enhance color
  - **Water**
    - The easiest way to kill is a succulent is to over-water!
      - Don’t “kill them with kindness”
    - Look for the signs that they need water:
      - Leaves or stems soften and become slightly wrinkly
Michigan State University
HORTICULTURE GARDENS

- Soil surface looks dry, and is dry all the way to the bottom
- Pot feels light-weight when lifted
  - In most home settings, succulents should need water once a week or less.

**Growing Media/Potting Mix**
- Use only potting mix that is soil-less/soil-free
  - Garden soil (A.K.A. “dirt”) should not be used for any indoor plants
- Potting Mix:
  - Sterile, light-weight
  - May hold too much water for succulents
    - Can purchase “Cactus soil” with extra drainage
  - Can increase drainage of regular potting mix (and reduce the chance of over-watering) by adding sand, grit, or perlite

**Fertilizer**
- Most succulents are slower growing than your average houseplant and don’t need as much fertilizer
- Fertilize during the growing season (summer)
  - Many succulents slow down or go dormant in winter
  - Stop fertilizer during winter, could cause leggy growth
- Any water-soluble all-purpose fertilizer is fine
- Fertilize no more often than once per month

**Pests and Diseases**
- Due to their “thick skin”, most succulents are pretty resistant to most pests
- Mealy Bug- Dab or wipe with rubbing alcohol
- Aphids- Generally found on the tips/newest growth. Crush and wipe/spray off with water
- Rot- Water less, amend soil, can sometimes salvage a rotting succulent

**Give Your Succulents a “Vacation”**
- Move outdoors during the summer
  - Move outside after risk of frost is over (usually after Memorial Day), move back inside before night temps drop below 50F (usually around end of September)
  - Higher light, warmer temps
    - Grow new leaves/branches, bulk up, color up
  - May never have to water them
- Things to Consider:
  - Can get sunburn!
    - Slowly transition outdoors
      - Expect some loss of vigor when transitioning back inside
  - Can pick up pests outside
    - Inspect and clean before moving back inside
How to Propagate Succulents:

- **Seed Propagation**
  - Some varieties flower very rarely, so seed production can be limited
  - Example: Century Plant
  - Seed not readily available

- **Vegetative Propagation**
  - Generally very easy! Much faster than seed propagation.

1. **Leaf Cuttings**
   - Only need a single leaf, gently pull leaf off stem, keeping base of leaf intact
   - Lay leaf on top of soil, OR stick end in soil
   - The leaf will root, and eventually a new plantlet will form
   - Can take several months to generate new roots, stems, and leaves
   - The “mother” leaf will eventually shrivel up
   - Not all succulents can be propagated from leaf cuttings
     - Examples: Aloe, Agave, some Senecio

2. **Tip Cuttings**
   - Cut off the tip of a branch. The cutting contains part of the stem, with several leaves
   - Much faster (2 to 5 weeks)
   - Stem and leaves already present, just have to generate new roots

3. **Plantlets, Pups, Offsets**
   - Refers to baby plants that sprout from the mother plant
   - Can sprout almost anywhere on the mother plant
     - Examples: Aloe, Agave, Echeveria, Euphorbia, Gasteria, Haworthia, Kalanchoe, many cacti
   - Plantlets connected by a runner can be cut off or pulled apart
   - Plantlets connected directly to the mother plant:
     - If possible, twist and pull
     - Cacti/Euphorbia often heal better from a natural break than from a cut
     - Use tongs or tweezers for spiny cacti

**General Care for all Vegetative Cuttings:**

- Let cut-ends dry for 2 to 3 days before sticking
- Forms callus, prevents infection, prevents desiccation
- Stick cuttings or plantlets into sterile, damp, potting mix
- Can use rooting hormone, but not necessary
- Don’t water again until completely dry
- Keep in a bright spot, but out of intense light/heat
- Cuttings should root in 3 to 8 weeks, depending on the growing conditions and varieties of cuttings

**Where to buy cacti and succulents:**

- Lowes, Home Depot, even Meijer and Walmart
- Local Garden Centers/Greenhouses:
  - Van Atta’s, Smith Floral, Hyacinth House
- Online:
  - Ebay, Etsy (including unrooted cuttings)
Michigan State University
HORTICULTURE GARDENS

- Mountain Crest Gardens
- Leaf and Clay
- Altman Plants
- CactusStore.com (seeds)

- Trade/Share with Friends
- Houseplant and Succulent Sale at the MSU Gardens—check MSU Horticulture Gardens website for upcoming events