

Succulents: The Camels of the Plant World

Interview with Master Gardener, Anne Lowings

Anne Lowings has been a Sonoma County Master Gardener for six years. Besides being a world traveler, she's lived and gardened under a wide variety of growing conditions including South Africa and the American Southwest. She's gardened in different parts of Sonoma County since 1996. She's a plant collector, touring the State and beyond, to visit gardens and specialty nurseries. SCMG Lyn Gannon interviewed Anne for this article.



MG: There's been an amazing increase in the variety of succulents available in nurseries. What makes them so desirable?

ANNE: They're plants that have adapted to survive long periods without water. That's not the same as requiring no water! Succulents' specialized tissue makes them unique. It allows them to store water during periods of rain and release it during dry, adverse conditions. As a result, succulents can survive periods of drought.

MG: Where do succulents store their water and nutrients?

ANNE: That depends on the location of the specialized tissue. That tissue can be in the leaves, the stem or the root of the plant. Succulents get their characteristic thick, fleshy look when that storage capacity swells.

MG: Can you give an example of this mechanism?

ANNE: A common succulent is the Aloe, which has big, fleshy leaves. The healing gel found inside an Aloe Vera's broken leaf is also the plant's water storage system.

MG: I see succulents wherever I look. Are they native to this area?

ANNE: Succulents are indigenous to many parts of the world and are seen under many different conditions. Typically, they come from Africa, Central America, the European Alps, South America and South Africa. One native succulent frequently sold in local nurseries is the Dudleya (common name Sea Lettuce).

MG: Even though succulents are grouped as one kind of plant, do they thrive in different settings?

ANNE: Yes. In order to match a succulent with its ideal site conditions, it's helpful to know their origins. For example, Aloes come from Africa, Agaves from America. In their native habitats, their conditions can vary from the humid dark jungles (home to Christmas Cactus) to the desert plain with scorching days and freezing nights. However, most of the commonly grown succulents originate from areas that receive very sporadic rainfall. Some spiky succulents, like Euphorbia and cacti, come from the high mountains of South America. Often their only water comes from mist, which condenses on the spines and drops on to the soil. This structure, which protects the plant from predators, also serves an effective way of collecting water.



MG: This is fascinating to a plant nerd like myself. But I gotta ask - What's a nice, English girl like you doing with tough plants like succulents?

ANNE: Originally, my gardening efforts were spent trying to re-create my grandmother's English Cottage garden. Ironically I then lived many years in South Africa with its Mediterranean climate and later I moved to the US Southwest. In both places, I completely ignored all the native plants. A couple of winters ago, I visited the Huntington Desert Garden in Southern California. While there, I saw plants with the most amazing color and form. I came back and took a hard look at my garden in Guerneville. The roses were bare sticks and the perennials had died back to the ground! I decided I was working too hard, and not getting enough return in the winter months.

MG: I loved having a garden overflowing with plants, too! But after chopping back and hauling away lots of debris every year, I noticed I could appreciate my plants' form if I left space between them.

ANNE: That's right! One thing I like about succulent is their structure. So many cry out for a space of their own! When you give them some room, you can appreciate their shapes that give dramatic touches to the garden.

MG: Besides the variety of shapes, I love their range of colors. I've literally seen succulents in every color imaginable.

ANNE: That's just the leaves! The flowers are an added bonus; some simply glow. There's a wonderful Aloe hybrid, 'Fred Johnson', which has bloomed virtually non-stop all year in our garden. The frost can nip the flowers, but otherwise it just keeps blooming.

MG: What else do you like about succulents?

ANNE: Another advantage of succulents is that they don't lose their leaves when they're drought stressed. Their leaves shrink or pucker up instead. When watered later, the leaves swell up again. So you don't have to cut back a lot of foliage, nor dispose of a bunch of garden debris. That combination cuts way back on maintenance. And, succulents tend to grow slowly, too, so they don't outgrow their locations rapidly. When installing a garden, it's hard to picture how large that plant in a 4" pot will get large over time, and then it's easy to plant too close. Later, you may be moving or pruning that same plant frequently. This rarely happens with slow-growing succulents. A word of warning, however! The Agave Americana (or Century Plant) can swallow up an entire front yard.

MG: Succulents are resilient, too! Every summer, the West County's mild coastal weather is interspersed with a few killer hundred-degree days! Unlike many plants, I've noticed that succulents can handle that rapid change in conditions. What succulent successes have you had in your garden?

ANNE: We had a steep, south-facing terrace at our last home. Since big rocks

and succulents go so well together, we replaced the terracing with boulders, making more of a rock garden. Further from the house, we planted *Drosanthemum floribundum* - great for erosion control and spectacularly colorful. We also used succulents as 'living mulch' around

some Ceanothus and trees.

MG: What other succulents thrived on your slope?

ANNE: We had lots of luck with Echeverias, (just not the fancy ruffled hybrids as they're frost tender), Aeoniums, Agaves (the varieties that don't get too big), and ground covers like Delasperma, Sedums and Sempervivums.



MG: Did using succulents help eliminate weeds?

ANNE: Eventually. Once the plants grew in, we had very few problems with weeds, though we had to hand pull some at first.

MG: Any luck controlling weeds with mulch?

ANNE: That was a dilemma because succulents don't like organic mulch, and I was mixing them with other plants that did. So, I used the organic mulch around the perennials and then faded into a rock/mineral-based mulch around the succulents.

MG: What other plants did well when inter-planted with succulents?

ANNE: The most important factor was matching the cultivation needs. I found succulents worked very well planted between thyme, lavender, rosemary, santolina and other drought tolerant plants. The main thing is that you don't want to mix succulents with real water hogs!

MG: Are there tricks to increasing your success rate when planting succulents?



ANNE: Succulents prefer a lean mean soil, not one rich in humus. They don't like the cold wet conditions, typical of our winter weather. If you provide them with good drainage, their roots don't remain too wet. Try reducing your soil's water holding capacity by amending the soil with coarse sharp sand, pumice, or decomposed granite. Plant high, too, so the water can stream away from the plant's crown. Another trick – try siting succulents on a small mound as opposed to a depression, or at the top of a slope as opposed to the bottom.

MG: Uh-oh, succulents store water but they don't like to have wet feet. How can you tell when your succulents are getting too much or too little water?

ANNE: If getting too little water, the plant's leaves pucker, and the leaves lose their gloss. Some plants will turn a showier red when they get less water. One indication of too much water is crown rot and bacterial rot. Tissues turn darker or black and go mushy.

MG: What are the challenges in the summer months?

ANNE: The ideal temperature range for non-hardy succulents is 40F- 80F with 6 to 12 hours of bright light. Contrary to popular belief they do not do well without protection from fierce afternoon sun.

MG: Based on what you learned, are there things you'd have done differently?

ANNE: I planted some plants without checking their frost tolerance. Sure enough, they turned into mush with an early frost. Through trial and error, I learned the importance of microclimates in my garden. For example, the Aeoniums at the bottom of the slope froze, but the ones at the top didn't.

MG: So slope matters!

ANNE: It does. Conditions can vary in just one bed, too. Planting on the south side of a boulder can make a difference, as rocks tend to hold heat.

MG: Besides frost (in some cases) and poor drainage, do succulents have any other weak spots?

ANNE: Though remarkably trouble free, succulents are still susceptible to pests. Mealy bugs are difficult to see and like to lodge deep in the rosettes, causing damage by sucking on tissues. Aphids can also be a problem. My Sedum 'Autumn Joy' gets aphids every year but they're not a real threat to health of the plant so I don't use any pesticides. Of course slugs and snails can damage leaves. Their presence can be detected by their tell tale slime trails. These pests can be controlled by some "mid-night gardening" - hand picking them in the dark when they are active. But really succulents' biggest nemesis is rot and fungal disease caused from too much water.

MG: Before we wind up, what's your favorite reference tool for succulents?

ANNE: I like both of Debra Baldwin's books - "Designing with Succulents" and "Succulent Container Gardens" - both have great pictures. "Hardy Succulents" by Gwen Kalaidis is helpful because it focuses on succulents for colder climates. I also like "The Complete Book of Cacti and Succulents" by Terry Hewitt because it has diagrams for individual plants showing large each can grow.

MG: Thank you for giving us dirt about plants which require so little care but can add so much to the dimension of our local gardens!

As a member of the Sonoma County Master Gardeners' Library Series, Anne Lowings offers lectures about succulents and about IPM or Integrated Pest Management (which encourages home gardeners to reduce their dependence on chemicals for pest control).

Succulent Top Ten

MG Lyn Gannon says "I like succulents because they:"

Require minimal maintenance - Require little training, staking, or severe pruning. If drought stressed, their leaves shrink, but don't drop. Later, when watered, their leaves plump up again, requiring little clean up.

Offer unique architectural shapes, foliage colors and textures - Are renowned for an endless array of unique textures, architectural shapes and colorful foliage.

Are attractive 12 months out of the year - Most succulents are evergreen. They keep their attractive foliage and dramatic shape throughout the entire year.

Can handle difficult conditions - Many succulents can thrive under conditions which would stress other plants. They tolerate low water, poor and shallow soils, windy conditions, and steep slopes.

Are tough but not invasive - Their shallow roots systems don't compete with other plants for water and nutrients, nor do they damage pavement or building foundations.

Are very adaptable - though they can handle low water conditions, they can often be inter-planted with more moisture loving plants, provided that they have good drainage.

Are great "fill ins" between upright plants – Nothing offsets upright plants like ground cover succulents. Because they don't require much moisture, weeds don't grow persistently between them.

Are fire safe – They offer this winning combination: tissues with high moisture content and low, if any, flammable oils.

Can be easily transplanted – Their shallow root systems allow them to be moved easily.

Are easily propagated – If you have a succulent that works in your garden, it's easy to start more. Put a piece of the plant in some well drained soil, water occasionally and wait for it to root.



Succulent "Do's & Don'ts"

Plant in well drained soil, in raised beds, on slopes, or on berms. Avoid depressions, and plant with crowns slightly raised.

Improve drainage by adding sharp sand, gravel, crushed rock, pumice or decomposed granite. Aim for soil that's as damp as a wrung out sponge.

Water sparingly and hone your observational skills. The leaves of overwatered plants get mushy; droughts stressed succulents shrink and lose their sheen. If they need water, the leaves of succulents lose their sheen and pucker.

- Removed decayed leaves since organic matter can encourage the growth of bacteria and fungi which lead to rot.
- Provide bright light, but avoid scorching sun. Most succulents need only 3-4 hours of sun/day. Depending on your microclimate, morning sun may be sufficient.
- Fertilize marginally.
- Keep warm and on the dry side. Ideal conditions include low humidity and temperatures between 40-85 degrees, though many succulents can tolerate more extremes.
- Protect frost sensitive succulents with light weight, breathable fabric (not Visqueen).
- Provide good air circulation.
- Expose to sun gradually after purchasing. Many are grown under indirect light and need time to adjust to direct sunlight.