

## Drought Tolerant Roses

### *A guide for low water use gardening with roses in California's Mediterranean Climate regions*

By Tamara L. C. Johnson Fall 2014

Gertrude Stein once said: "A rose, is a rose, is a rose". Referring to an obligatory gift of a florist rose perhaps by a less than romantic lover. But. Lovers of roses know that there are many types and classifications of roses, and to the credit of the Rose genus, Ms. Stein's statement could not be more untrue.

Most people today think of the more modern Hybrid Tea rose when the word rose comes to mind. Most municipal rose gardens are full of Hybrid Teas, Floribundas and Grandifloras with their large showy blooms, coarse stems and leaves and often cut flower/commercial appeal. The San Jose Heritage Rose Garden is a different sort of rose garden. Yes, here you will find an assortment of notable Hybrid Teas but, the majority of roses in the garden collection are of other classes. There are roses representative of every type in the San Jose Heritage Garden's Collection, some are more drought tolerant by nature than others.

The **Hybrid Tea** is a rather thirsty class of rose. It requires regular water to keep pumping out luscious blooms but, with proper cultural techniques these plants can get by with only a **weekly deep soaking**. There are other roses that get by with little or no water once established, and these are the main focus of this lecture.

Many factors influence the ability of a plant to be drought tolerant. Cultural techniques involve soil management, mulching and pruning, as well as choice of plant material and planting time, depth and structure of the top soil, depth to water table, mychorrhizal populations and organic matter are environmental factors. Genetics is another.

The San Francisco Bay Area and much of the Central and South Coast is classified as having a Mediterranean Climate. The Koppen Classification system characterizes a Mediterranean climate as one having **hot, dry summers and cool wet winters**. Besides the actual Mediterranean region, this climate type can be found in parts of Chile, South Africa, and South Western Australia.

This means that drought is a natural part of each California summer. This also means that many subtropical plants can be grown here with relative frost-free success in certain microclimates. It also means that the temperate, tender roses can be grown as successfully here as on the French Riviera where many classes of roses originated through east meets west hybridization techniques. For example the Tea rose would freeze on the prairie but, in San Jose gardens it may bloom in flushes year round.

Here, hard pruning is unnecessary to prevent freeze damage. Heavy winter mulches are detrimental but, compost feeds the earthworms that awaken with the autumnal and winter rains and help prepare the roots for spring top growth. Some roses are genetically more suited to surviving in a dryer and/or warmer climate than others.

Notably our native roses. There are many species roses from similar climactic zones that establish well here.

So how do we enjoy roses in our gardens in a thirsty state? First we must choose plants wisely, prepare our soil, plant at the best time, mulch, schedule irrigation conservatively, and prune lightly.

## **Planting Time**

In the Mediterranean climate, **autumn is an ideal planting time.** The onset of shorter days and cooler weather makes it easier to keep plants hydrated. Heat waves may yet come and require irrigation but, rains will encourage deep root formation as cooler weather slows top growth.

It becomes harder to establish a planting after the equinox in March as rains diminish and soil and air temperatures rise. Late winter is the ideal time for fertilization, and spring becomes the best time to top dress with water retentive mulch to keep the soil profile deeply moist. It is best to top dress and mulch before May to retain a deeper moist soil profile before the long hot days cause the soil to dry.

Watering checks can be formed around individual plants at the time of planting. Whether one chooses to hand water or use drip irrigation water checks act like basins around the plant and help keep water in the root zone. On sloping sites I have used rock and broken concrete to maintain the watering checks and keep both mulch and water from moving downhill.

## **Soil Preparation and Mulching**

Clay soils naturally hold more water than sandy soils but, drainage can be a problem. Water retention can be improved in both sandy, clay and loamy soils with the addition of organic matter. A well composted manure or sifted kitchen waste compost can achieve this when added to the soil at planting time.

As stated in a Fine Gardening article:

*“The old thinking on roses was to focus on amending only that two-foot by two-foot (60cm x 60cm) hole. No longer. I want you to focus on the entire planting area - particularly if it is a new bed or you are totally replacing an old one.*

*More and more studies are highlighting the symbiotic relationship between plant life and the soil’s micro-organisms. The most widely discussed being Mycorrhiza. Knowing what they do and how they work will help you better understand why preparing the entire bed is paramount.*

*The simplest explanation I ever received was this. Mycorrhiza are naturally occurring beneficial fungi that attach themselves to the roots of the plant. They put out tendrils that can go into the soil - well beyond the*

plant's roots. They channel water and nutrients back to the plant and in exchange receive sugars such as glucose and sucrose from the plant. Because the plant's reach is now well beyond its root system it can better withstand drought, bring in more minerals and nutrients and thereby enhance its own inner immune system. Simply put. Healthier roses better able to naturally withstand whatever nature throws their way. This is known as "Pro-Biotic's".

## Mulching

Seasonal additions of compost to the top layer of soil worked in gently with a trowel helps provide a slow and steady release of plant nutrients. A mulch of wood chips or straw on top of this adds a barrier to evaporation and an additional carbon source for earthworms and microorganisms. Without the addition of aged manure or compost to the soil before the addition of carbon rich mulch, soil may become temporally depleted of nitrogen needed for leaf growth as it becomes incorporated in the soil organisms bodies. As these organisms die however, the nitrogen will be released back into the soil and become available for plant use. I recommend straw, or wood chips or even just well aged composted horse manure spread in the planted area around roses 2 to 4 inches deep. **Be careful** not to pile mulch too close to the base of the rose stems and trunks to prevent rot.

The following article likens the soil desired to be like that of the forest floor. While it is true that roses prefer a slightly acid soil pH, and forest humus is acidic in nature, I find most roses are field growers rather than forest plants and do better with the influence of earthworms rather than the earthworm free environment of the forest.

An article from Fine Gardening magazine puts it this way:

*This is where the two layered mulch approach comes in. And it does nothing more that replicate what Mother Nature has been doing for the forest floor for millions of years.*

*It starts with two things. A layer of compost and a layer of fresh mulch on top of that. To understand why you need to know one simple fact.*

*Fresh mulch needs nitrogen to break down. It pulls nitrogen from the air and from the soil beneath it.*

*Therefore if you put fresh mulch on bare ground it actually pulls it from the soil thereby robbing your plants of much needed nitrogen. You get the same thing if you remove all the old mulch first (and we've all heard to do this) and then put fresh mulch down on the bare ground.*

*However once the mulch is broken down the reverse happens. It begins to emit nitrogen down into the soil and into the air.*

*That is why the first layer should always be compost. It is your nitrogen emitting layer. It emits nitrogen in two directions. First to the ground and secondly into the fresh layer of mulch you put on top of it thereby helping it break down. This means your fresh mulch is no longer taking nitrogen from your plants as it breaks down.*

In an article about EarthKind roses, Gaye Hammond recommends : *"Maintaining a 3 to 4 inch layer of hardwood mulch on your roses will eliminate the need to fertilize the bushes with commercial or organic fertilizers. Even though roses are known as heavy feeders, we have found that maintaining a 3 to 4 inch layer of hardwood mulch (preferably containing shredded hardwood, outer bark and leaf tissue) replicates forest floor conditions. Gardeners will find during the first year the bottom inch of mulch will decompose into humus.*

*"If, at the end of the first year, the gardener adds another inch of mulch on top of the existing layers it should take only 6 months for the next bottom inch of mulch to decompose. After the first year, gardeners who have created this 'living mulch' cycle will only need to add 1 inch of hardwood mulch 2 times each year."*

### **Irrigation and Water Conservation**

As drought is a natural part of California living it behooves us to be **water wise**. It gets to be the hip thing to do during drier years but, it is seriously important to practice water conservation at all times.

So how do we achieve this in the garden?

\* The main goal of irrigation is to keep plants hydrated and promote healthy growth.

**Deep infrequent watering** promotes deeper root growth allowing the plant access to more soil minerals and more water especially when the surface area dries out. Frequent short watering leads to shallower root growth and is discouraged.

Watering to a depth of 12 to 18 inches below the soil surface insures deep root growth. A typical garden hose at minimum pressure will take about 5 minutes to emit 10 gallons of water.

Bucket method: some people like to drill ¼ holes in the bottom of a five-gallon bucket placed in the vicinity of a rose plant. The bucket is then filled with water that will slowly percolate into the soil below.

\* We can amend our soil to improve its water retention and mulch the soil surface to prevent unnecessary evaporation.

\* We can construct watering checks/basins around our plants to keep applied water in the root zone. Build basins 4 to 6 inches high. An 18 inch diameter will work for new plantings but, I like to say as above so below and make mine the to the diameter I want my rose to grow into, or about 3 feet in diameter minimum. Two to six inches of water can be applied by a garden hose into each basin at once or at intervals or drip emitters may be placed within the basin Roses in sandy soils may need more frequent watering than roses growing in clay; the basin may need to be filled twice for sandy soil.

- \* We can utilize drip irrigation systems and install timers to apply water to the plant root zone without losing water to overspray.
- \* We can water our gardens before or after the heat of the day to limit water loss through evaporation.
- \* We can keep higher water need plants such as food crops in areas separate from lower water use plants.
- \* We can limit the plantings of high water use plants and lawns by choosing drought tolerant plants, drought tolerant roses and companion plants.
- \* We can establish our landscape plants with the rains from Fall equinox through Winter.
- \* When it rains we can capture and store water for future use with buckets, rain barrels, drywells or cisterns.
- \* We can reuse household water with gray water systems using nontoxic cleaning solutions.

## 1. Choosing your roses

When gardening Water Wise there are many types of roses to choose from. All roses should benefit from sound soil and mulching practices and deep watering. There are many types that have a fairly high degree of drought tolerance once they have become established. Many of the best can be found growing unaided in abandoned lots and cemeteries throughout the state.

Here in the San Francisco Bay Area and Central Coast we have many options. These include native roses, some species roses, Teas, Tea/Noisettes, Noisettes, Gigantea Hybrids, Chinas, Tea/Chinas, Polyanthas, Hybrid musks, some Bourbons and many deep rooted Ramblers.

**Native roses** may not be suited to most gardens unless their qualities are understood. They will spread through suckering which could present a problem in some areas but, containment systems such as those used for bamboo can prevent unwanted expansion. **Rosa Californica** likes water and is usually found in open sunny watershed areas not far from streams. It can tolerate drought conditions with some summer dormancy and it is a good plant in larger landscapes with other native plants. **Rosa gymnocarpa** does well in woodland situations with more shade than most roses prefer. **Rosa nutkana** and **Rosa sonomensis** are also native species that do well in mixed drought tolerant landscapes

**Teas** are one of the best bets for a drought tolerant garden requiring little care and water and giving near year round blooms. Popular in the gold rush era, many can be found along Highway 49 and throughout the state thriving in forgotten places and old established gardens. There are many to choose from. They need little to no water once established and will go somewhat dormant with less water between blooming flushes.

**Pruning:** They require very little pruning, best to only remove 1/3 of the rose if needed and should never be hard pruned. Dead heading and shaping are all that is necessary. Removal of crossing branches and diseased branches is all right any time of year. This is true for the **Chinas** and **Tea Chinas** as well as the **Noisettes, Tea/Noisettes, Polyanthas** and **Giganteas**. Some **Bourbon** roses notably 'Climbing Souvenir de La Malmaison' do exceptionally well with minimal summer water. There are a plethora of **Ramblers** that are deeply rooted and withstand summer drought such as the commonly found 'Dorothy Perkins' and relatives, 'Silver Moon', 'Red Run Around' and 'Russell's Cottage Rose'. Ramblers usually withstand harder pruning but they don't need it.

During a drought it is especially important to avoid any unnecessary pruning. As Jill Perry puts it, "We prune for our own benefit, not the roses." One can dead head for flower production and shape any time of year. Strictly pruning in winter isn't needed by the rose. **Hybrid Perpetuals, Damask roses, and some Gallicas** can prove more water needy than others and also do better with an annual reduction of old growth.

For more on pruning see the link to San Jose Heritage Garden curator Jill Perry's rose blog link:

<http://oldtearoses.wordpress.com/2011/02/06/pruning-for-the-totally-timid/>

According to Carolyn Parker from her blog : Roses A to Z

*"Dr. Steven George, an Extension horticulturist at Texas A&M University, took the search for hardy, drought-resistant roses a few steps further. In 1996, he began a scientific study that subjected 468 roses to extreme conditions. The roses were never fertilized, never sprayed, received no supplemental watering after the first year and were never pruned, other than to remove deadwood.*

*The winners*

*Eleven roses emerged as spectacular performers. They were introduced in 2002 as EarthKind roses. The first group included Sea Foam, Marie Daly, the Fairy, Caldwell Pink, Red Knock Out, Perle d'Or, Belinda's Dream, Else Poulsen, Carefree Beauty, Mutabilis and Climbing Pinkie."*

Earth-Kind is a special designation given to select rose cultivars by the Texas AgriLife Extension Service through the Earth-Kind landscaping program. It is based on the results of extensive research and field trials and is awarded only to those roses demonstrating superior pest tolerance, combined with outstanding landscape performance.

Earth-Kind roses do well in a variety of soil types, ranging from well-drained acid sands to poorly aerated, highly alkaline clays. Once established, these select cultivars also have excellent heat and drought tolerance.

The use of Earth-Kind roses provides the opportunity to enjoy these wonderful flowering plants while limiting the use of fertilizers, pesticides, and water. These sustainable

practices are excellent examples of how Earth-Kind landscaping is working to preserve and protect our natural resources and the environment.

The following is a list of roses that I have grown and their relative water needs in times of drought.

There are more roses that could be added to this list. I include it here as a guide for water management in the garden. Needs will vary with temperature, and soil types and depth to water table. If one is gardening on a site with a shallow soil profile to bedrock, one will have very different water needs as shallow rooting would result. Remember mulch improves water retention and lessens irrigation needs.

### **Tamara's Water Wise Rose List**

#### **Teas**

*There are many to choose from. The following are some of my tried and true favorites: doing well with very little summer water once established. Blooming in flushes if watered deeply monthly.*

*Anna Olivier and Lady Roberts – Ducher 1872*

*Alliance Franco-Russe, - Goinard 1899*

*Devoniensis – Foster 1838*

*Jesse Hildreth- found*

*Catherine Mermet, Bridesmaid – blooms hold up well in heat –Guillot Fils 1869, Moore 1893*

*Clementina Carbonieri – Bonfiglioli & Figlioli 1913*

*Comtesse de Labarthe aka Duchesse de Brabant (purportedly President Teddy Roosevelts button hole rose) – Bernede 1857*

*Madame Lambard – Lacharme 1878*

*Enchanteresse –Cook 1904*

*G. Nabbonand – Nabonnand 1897*

*General Gallieni – Nabonnand 1899*

*Lady Hillingdon – Lowe and Shawyer 1910*

*Le Vesuve –Laffay 1825*

*Madame Berkeley –Bernaix Fils 1898*

Maman Cochet, White Maman Cochet and Niles Cochet – *Cochet 1893, Cook 1896, Calif. Nursery Co. 1906*

Marie Van Houte - *Ducher 1871*

Monsieur Tillier and Archduke Joseph – *Bernaix 1891*

Papa Gontier and Rainbow –*Nabonnand 1883, Sievers 1889*

Rosette Delizy – *Nabonnand 1922*

Rubens – *Robert et Moreau 1859*

La Sylphide – *Boyau 1848*

### **Chinas and Tea Chinas**

Cramoisi Superieur

Ragged Robin/ Gloire des Rosomanes

Hermosa

Louis Phillipe

Lady Ann Kidwell

Matteo's Silk Butterflies

Mutabiis

Old Blush

### **Hybrid Chinas**

*Surviving often with no summer water but, preferring deep watering monthly in the dry season*

Hippolyte

Old Homestead/Honeymoon Cottage

Old Red Run Around

Mrs. Keays?The Bishop, Velours Episcopal .

### **Musk Roses**

*can survive with no summer water when established but, will rebloom with deep monthly water*

Secret Garden Musk

Rosa Moschata Plena

### **Hybrid Musks**

*Some drought resistance, best with deep water every 3 to 4 weeks in dry season*

Ballerina – *Bentall 1939*

Buff Beauty – *Bentall 1939*

Clytemnestra – *Pemberton 1915*

Danae – *Pemberton 1913*

Excellenz von Schubert – *Lambert 1909*

Lavender Lassie – *Kordes 1960*

Penelope – *Pemberton 1924*

Sally Holmes – *Holmes 1976*

### **Polyanthas**

*Some prove more drought tolerant than others if well established, preferring occasional summer water*

Clotilde Soupert

La Marne – *Barbier 1915*

Lady Ann Kidwell – *Krebs 1948*

Lady Reading – *Van Kleef 1921*

Little White Pet – *Henderson 1879*

Marie Pavie – *Allegatiere 1888*

Mlle. Cecille Brunner – *Ducher 1881*

Mme Norbert Levavasseur – *Levavasseur 1903*

Perle D'Or – *Rambaux 1884*

Orleans Rose – *Levavasseur 1909*

Sunshine – *Robichon 1927*

The Fairy – *Bentall 1932*

The Gift – *Demits 1980's*

## **Gigantea hybrids**

*These generally do well in place with no summer water once established*

Belle of Portugal /Belle Portugaise

Folette

## **Ramblers**

Agalia – Lambert 1896

Alberic Barbier – Barbier 1900

Albertine – Barbier 1921

Alexander Girault – Barbier 1909

American Pillar – Van Fleet 1902

Aviateur Blériot – Fauque 1910

Baltimore Belle – Feast 1843

Bloomfield Courage – Thomas 1925

Chevy Chase - Hansen 1939

Claire Jacquier – Bernaix 1888

Climbing American Beauty – Houpes 1909

De La Grifferraie – Vibert 1845

Dorothy Perkins – Jackson and Perkins 1901

Emily Gray – Williams 1918

Felicite' et Perpet'tue – Jacques 1828

Francois Juranville – Barbier

Gardenia - Manda 1899

Harry Maasz – Kordes 1939

Leontine Gervais - Barbier 1903

Long John Silver – Horvath 1934

Mrs. F.W. Flight – Cutbush 1905

NewPort Fairy – Gardner 1908

Laure Davoust / Marjorie Lester

Russelliana, Russell's Cottage Rose – 1837

Silvermoon – *Van Fleet 1910*

Rambling Rector

Seagull – *Pritchard 1907*

Tausendschon

Treasure Trove – *Treasure 1977*

Vielchenblau – *Schmidt 1909*

Violette – *Turbat 1921*

### **Species roses**

*Many species can be grown with little to no summer water once established*

Rosa brunonii , The Himalayan Musk rose and La Mortola

California natives: Rosa californica, R.c. 'Plena', R.gymnocarpa, R. nutkana, R. microfolia, R. spitiamea sonomensis

Rosa canina

Rosa eglanteria –Sweet Briar rose

Rosa glauca

Rosa Laevigata- the Cherokee rose

Rosa roxburghii, The Chestnut Rose

Rosa rugosa rubra

### **Bourbons and Hybrid Bourbons**

*Though this class generally prefers regular water, a few have excellent drought tolerance once established.*

Climbing Souvenir de La Malmaison

Madame Isaac Pereire

Madame Pierre Oger

'San Juan Settler'

## **Albas**

*Most prefer regular water but some do well if well established with water every other week to two weeks, such as Alba and Alba semi-plena*

## **Spinosissima**

*A good bet, Harrison's Yellow has been found in abandoned homesteads surviving with no care*

## **Damask**

*These prefer a rich loamy soil and can do well with little care where the water table is relatively high much like Rosa Californica,*

Rosa Damascena, Rose of Castille

## **Mosses**

*Similar in need to Rosa Damascena both do best with a minimum of water every other week*

Quatre Saison's Blanc Mousseaux

## **Hybrid Perpetuals**

Regular water preferred in dry season minimum of every other week to weekly.

## **Hybrid Teas, Grandifloras, Floribundas**

*Best with weekly deep watering, they can survive with water every other week but will not bloom as frequently.*

## **Rosa Banksia**

*Many can be found naturalized on old estates in California, especially Fortuniana which was often used as a rootstock.*

Fortuniana – Robert Fortune ? 1850

Hybrid de Castiello – 1920

White Lady Banks. Rosa banksiae banksiae – Kent 1796

Yellow Lady Banks, R. banksiae lutea

Single Yellow Banksia, R. banksiae lutescens

Single White Banksia, R. banksiae normalis