It’s 110 Degrees. . .Now What Do I Do?

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Rose Society Of Tucson

Dealing with 100 degree temperatures is part of life in Tucson every summer.

It is a six month marathon of heat every May-October.

Within that span of time, we always face a few weeks of extreme heat that climbs over 110, and it has the potential to kill rose plants or seriously weaken them if proper steps are not put in place.

Over the past 10 years, we have not lost a single rose through the summer because of the system we have put in place which was only arrived at after decades of experimentation and talking to other rose growers and gardeners who live in hot climates.

Every summer, our roses grow slowly but consistently and produce basal breaks from bud unions of virtually every plant.

Old Theories Don’t Work

When Diane and I first started growing roses nearly 40 years ago, we had no idea how to get roses through an Arizona summer without plants suffering.

When 90 degree temperatures arrived in April, we were told to put down a thick mulch on the soil level of each plant.

One highly respected rose grower suggested we purchase a bale of straw, pull small sections out and run them over with a lawn mower to have smaller pieces of straw which we could utilize as a mulch.

The theory was that it would keep the soil cooler, which it did. He told us that at the end of the summer, the straw would completely break down. About half of the straw did break down into humus, but the other half sat there.

We also were told NOT to fertilize during the summer because new growth would burn with the intense heat every afternoon and stress plants. Also, we were told not to cut off old blooms and simply leave them on the plant so all the energy could be retained in the plants when hot weather hit.

It all made common sense to us since the advice came from people who had grown roses for decades.

Then we were told to simply water our plants well consistently all summer with many being watered every day. Many of our roses were in sun all day long.

That was the complete plan to battle intense heat in Tucson.

Unfortunately, all 12 years we used this system produced roses that looked terrible at the end of each summer in September.

It was common to see the bottom three quarters of the foliage completely drop each summer as plants were left with sparse foliage on top. When we trimmed back roses in September for our traditional great November bloom, this light trimming often eliminated ALL the foliage left on the plant.

Keep in mind there were 4-5 weeks left of 100 degree weather that the plants had to endure before cooler weather finally arrived.

We had no idea we were setting up plants to die as plants were fertilized to push growth. Cane after cane turned black from the bud union going up as they shriveled up.

During this time, we had no idea how to solve this annual death dance for our plants.

Summer Care Trailblazers

Thirty years ago in 1989, Ken Jones of Glendale, Ariz. got sick and tired of watching his roses being tortured every summer with relentless heat.

The death count of rose bushes from the summer furnace annually tallied in double figures.

One day he came up with an answer — shade cloth.

In addition, he installed water misters above his roses that came on several times a day to lower the air temperature and bring up the humidity.

Misting System Lowered Temperature, Saved Water.

If it sounds like a better mousetrap for hot, dry climates, it was.

"I tried everything to reduce water usage in the summer, including soil polymers that were being highly touted," said Ken during an interview I had with him at the time. He passed away a few years ago.

"Frankly, I never saw positive results with the soil polymers. Then I came up with the idea of using shade screen over an area of my rose garden. I found that the water consumption was reduced. But then I added a light misting to the roses four times during the hottest portion of the day, and my records showed that I could reduce water use in the rose garden by 60 percent."

If this seems like a staggering statement, read on.

Ken backed up such a claim with statistics he gathered the first two years of this experiment in 1990 and 1991. About half of his roses were in full sun while the others were under shade cloth and misters during this test.

"If you think about it, an established rose bush in the ground takes about 1-2 gallons of water per watering. On average, you probably use 50 gallons of water per bush per month. After I put up the shade screen (50 percent of the sun's rays blocked), I reduced the watering needs of these roses during the summer by 1/3.

"I found I only had to use 35 gallons of water per bush per month because three of the watering cycles were eliminated. And this doesn't even take into consideration rains we may have.

"With shade screen and the use of 3-gallon misters spraying for 15 minutes four times a day during the hottest portion of the afternoon, the reduction in water usage was unbelievable."

Water Conservation

Ken threw out some startling figures.

"Let's say you have 20 rose bushes. If you do not shade your roses in any fashion during the summer in a hot climate like mine, you can expect to use 1,000 gallons of water to keep them alive per month. With shade cloth over my roses, I found that I could reduce that figure to 700 gallons per month. With shade screen and misting four times a day, that figure was reduced to 400 gallons per month."

Ken was asked the difference in quality of plants with those under shade and mist compared to others that baked in the sun but received nearly triple the water.

"That's also very interesting. Many of the bushes under the screen which got misted grew seven to eight feet tall during the summer while the others in the full sun seemed to go dormant."

The only drawback to this system was that the leaves have a slight salt buildup because of the misting of water four times a day since the water supply is highly alkaline.

"But the plants grow so much more vigorously under shade and misting during the hot summer. I am sold on the idea, said Jones."

More Shade Cloth Being Used

More and more top exhibitors across the nation have utilized shade cloth since that experiment by Jones 30 years ago.

Eddie Garcia, a well known exhibitor from San Antonio, Tex., has experimented with shade cloth over his entire rose garden with great results. A number of other Texans have taken the plunge in purchasing shade cloth.

One of the top exhibitors in the nation years ago, Eddie Edwards of New Orleans (now deceased), explained how he used shade cloth years ago in an issue of the *Gulf District Bulletin.* He used shade cloth over his rose garden to filter out 43 percent of the sun on his roses.

In New Orleans during the summer, the temperature routinely climbs to 95 degrees and higher with very high humidity. He wanted to keep his bushes cooler, so he built an arbor 10 feet high by 12 feet wide throughout his garden. He used 4 x 4 posts (cemented in the ground) every 8 feet and then used 2 x 6s around the entire perimeter at the top.

Then he ran 2 x 6s every 18 inches to create the "roof".

After the structure was complete, he placed the shade screen on top of the 2 x 6s and secured it with cord running through brass rings. His roses received morning sun. But at noon, the cloth shaded his roses.

He was convinced the screen helped his bushes immensely because they were not under as much stress from the heat. Another reason he liked using shade cloth was that it protected his bushes during hail storms.

The only change he wanted to make was use 75 percent shade cloth instead of the 43 percent he initially used.

Personal Experience

In my own garden, I have used 63 percent shade screen above the roses every summer in my back yard for the past 21 years with tremendous success.

Shade Cloth Over Conduit Poles Has Been Our Answer To Summer Heat.

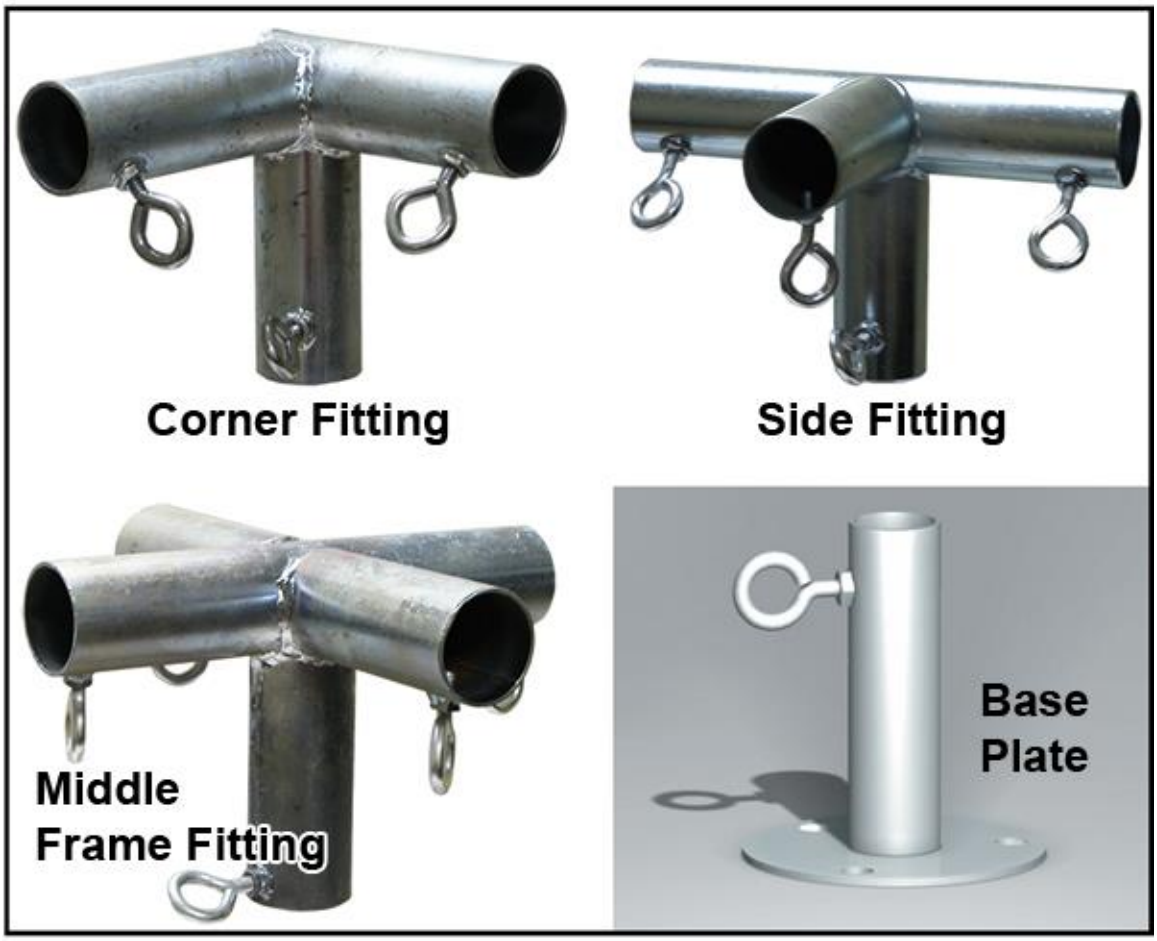
I initially used 75 percent shade cloth for five years. But the growth was spindly because the area had too much shade. Through trial and error for many years, 63 percent shade cloth seems to be ideal for roses.

In my garden, shade cloth goes up when the temperature reaches 90 degrees and does not come down until it stays at 90 degrees or below for a solid week. On many occasions, it goes up in mid-April and comes down in early November.

While many rose growers use wood structures to support their shade cloth, I have gone another direction because of the potential of termites with wood structures.

A Tucson nurseryman who grows cactus and other desert plants for a living has huge aluminum structures that have shade cloth on top of them. When I inquired about his system, he mentioned that I could set up a similar structure from 1 inch diameter aluminum conduit sold in 10 foot lengths.

Then you purchase special connectors from Stacy Tool in Tucson for a rigid structure (see photos below of fittings you need).



These fasteners come in different shapes to make a flat top or a slope that is higher in the middle than on the sides. All it takes is pushing the conduit into these fasteners and tightening them down with eye screws that are located in the fasteners to lock the conduit into place.

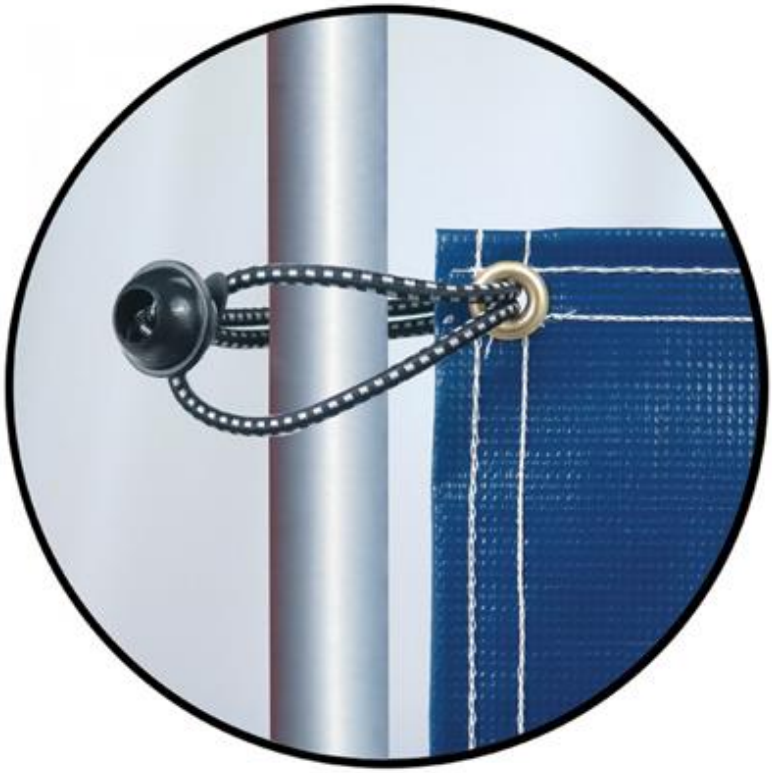
These products allow you to build a frame and legs for the structure.

Each structure can only go 10 feet wide x 10 feet long and 10 feet high (usual maximum length of conduit). So if you want a structure which is bigger (mine is 20 x 30), you have to choose the fasteners carefully so the structure all locks into place properly.

Grommets Important

I was told the best way to secure the shade cloth to such a structure was to carefully measure what the inside dimension was of the outside horizontal conduit poles. Let's say it measured exactly 10 feet wide by 10 feet long. Then you simply take off 2 inches on each side. That should be your finished shade cloth outside dimensions.

The reason is that you will attach the shade cloth to the outside posts with bungee cords (also sold at Stacy Supply, see graphic below)) which go through brass grommets which are spaced every foot along the outside edge of the shade cloth.



Bungee Cord Attachment To Conduit.

Near the corners, the grommets are twice as close for added structural support.

I specially ordered my shade cloth with these grommets attached from PAK Unlimited in Cornelia, GA. They did a superb job, and the quality of the shade cloth is tremendous as it has lasted 16 years so far.

But undoubtedly you could order from another shade cloth company in Arizona or California which would reduce the cost of postage.

The key is having high quality shade cloth WITH grommets placed at the proper spacing along the outside edge.

Shade West Side Of Pots

All of our roses are in 24 inch in diameter resin coated pots because of the poor soil we have in our yard.

During the summer, it is crucial that you shade the west side of these pots so roots don't cook when it gets over 90 degrees.

You can put anything that will keep the sun off the west side of pots such as plywood or even old 5-gallon pots.

Keep in mind that it might be 100 degrees in the shade. But out in the sun, it more than likely will be 150 degrees or more. Roses struggle in the summer if you don't take this important step.

Mike Jepsen of Tempe, Ariz. is one of the top rose growers in the Pacific Southwest District and utilizes styrofoam on the interior sides of pots before adding soil. He found this extra insulation prevents roots from baking during extreme hot days.

He also has been experimenting with fabric pots which he has been pleased with. They don't tend to get nearly as hot as black plastic pots during the summer and are inexpensive.

Mulch Important

We utilize Kellogs Gromulch as a mulch on the top of soil.

Since we have all pots, it goes to within two inches of the top of pots.

Water Spray Plants Every Morning

In the desert, the humidity is extremely low during the summer.

In addition, spider mites are a huge problem that can defoliate plants quickly if left unchecked.

That is why we spray off our roses every single morning during the summer with a Fogg-It Nozzle (Heavy Volume) which is attached to a hose (see below).

Fogg-It Nozzle (Heavy Volume Model)

The nozzle looks like three NASA Apollo rocket engines as they combine for one perfect spray that will blast off spider mites from leaves and add humidity which the plants need.

As a side note, we have never used misters four times a day as Ken Jones did. The morning spray of water to wash off foliage is enough in our garden.

Cut Off Spent Blooms Regularly

The last area to mention is cutting off spent blooms during the summer.

The sole mission we have every summer is to grow leaves and stems which allows for more shade.

By consistently cutting off spent blooms, it triggers the plant to grow.

It isn't unusual for our plants to grow several feet each summer. A sea of leaves means lots of shade for stems and soil as they produce growth under cooler conditions.

Fertilize Plants All Summer

As I mentioned earlier, we went 12 years without fertilizing roses during the summer with horrible results.

Every plant came into September with very little foliage left.

So I did an experiment one year where I fertilized four roses every week all summer long. One week I used Magnum Rose Food and the next Alaska Fish Emulsion. The rate was 1 tablespoon to 1 gallon of water mixed well for each plant.

All four roses were under shade cloth as well.

What transpired was a revelation to me. Each plant more than doubled in size with three or more basal breaks during the course of that 6-month summer. Dark, green leaves were on every plant from top to bottom.

I discovered that fertilizing was an absolute must in the summer.

Weekly summer fertilizing was not something I was going to do in the future. So I came up with a plan that has worked extremely well for us.

On May 1, apply 1/2 cup of Osmocote Plus 6 month fertilizer (granules) to the soil of each plant. Also apply ½ cup of Milorganite. Both of these products can be purchased at Home Depot. Then at the

beginning of the month in June, July, August and September, apply ½ cup of Milorganite to the soil of each plant. It has been ideal for our garden as plants grow slowly all summer long with dark, green foliage.

Watch Plants Carefully!

My final suggestion is walk through your rose garden every day during the summer to see if any of the plants are showing major signs of stress with severe leaf drop or canes turning black.

If you see this, you must act immediately. If the plant is in the ground, shade this plant immediately so it gets no direct sun the rest of the summer. If it is in a pot, put it in a shaded location as well.

This typically does the trick as long as you are watering plants properly.

Other Great Summer Systems

Mike Jepsen of Tempe, Ariz. is one of the elite rose growers in the Pacific Southwest District and has spent his career helping farmers grow superior crops.

Dealing with summer temperatures are always a serious challenge for him, as well as every rose grower in hot climates.

During the recent month of July, the average daily high temperature was 107.5 degrees in the greater Phoenix area as 10 days were 110 or higher.

Over the last five summers, he estimates that he lost 50-55 roses to unyielding heat.

Mike doesn't utilize shade cloth for his roses. A 70-year-old ash tree gives his plants some shade in the afternoon.

He does hose off his roses when the water is cool out of the faucet as he prefers to hose off plants in the early evening.

He waters potted roses every day via shrub nozzles which fan out sprays 3-4 inches. Every two weeks, he gives his pots a deep watering.

Mike found that he can get away with watering roses in the ground five times per week, plus a deep watering with a hose, every 7-10 days.

His watering method of choice for roses in the ground are 2 gallon per hour Bowsmith SB Series Non-Clog Emitters which are run 75 minutes each time.

Bowsmith 2 Gallon Per Hour SB Series Non-Clog Emitter

Two emitters are used for each plant in the ground — each one about 6 inches on opposite sides of the bud union.

The Bowsmith NonStop emitter design, patented in 1974, is based on a simple, unique principle found in no other emitter.

It permits the emitter to tolerate large amounts of suspended solids in irrigation water, without clogging and without the need for fine-mesh filter screens.

Mike said no additional filter or pressure reducer is used — only city water.

He said that he has used different emitters in the past, including flag emitters and Leaky Pipe. But they all clogged over time.

His Bowsmith emitters have been in use for the past 15 years without ever clogging and only cost about 50 cents each which he purchases at Horizon Irrigation in Phoenix.

Jepsen also likes to use an oscillating sprinkler 45 minutes for each section of his rose garden sometimes in the middle of the day and other times late in the day.

As far as mulch, he prefers shredded cedar from Home Depot and mulches 2-4 inches deep.

He fertilizes during the summer using Milorganite (1/2 cup per bush) in early June, mid-July and late August.

Jepsen deadheads weekly as he cuts off spent blooms and the peduncle only.

"One of the most important things you should do during the summer is check the temperature of your water before putting it on the soil or leaves of rose plants," said Jepsen.

"Water can be extremely hot coming out of a hose. So you must let it run a little before it comes in contact with roots or the foliage. Two years ago, scalding water surprisingly came out of my faucet early in the mornings as I lost 34 roses that year. So once again, be careful of the water temperature.

"Also be aware that your water source comes from a lake for the most part in Arizona. It continues to get saltier due to our extreme drought."

Rick Bennett Chimes In

Rick Bennett of Palm Desert, Calif. is also one of the top rose growers in the Pacific Southwest District. His roses face unyielding heat during the summer as we do in Arizona.

Last July, the average high temperature was 110 degrees. On two consecutive days, the mercury hit 123 degrees with overnight lows of 100.

Typically summer temperatures mirror what Phoenix experiences.

Over the last five years, he has lost 10 roses with most being in pots and ones in the ground where plants were damaged by heat and spider mite infestations that destroyed foliage.

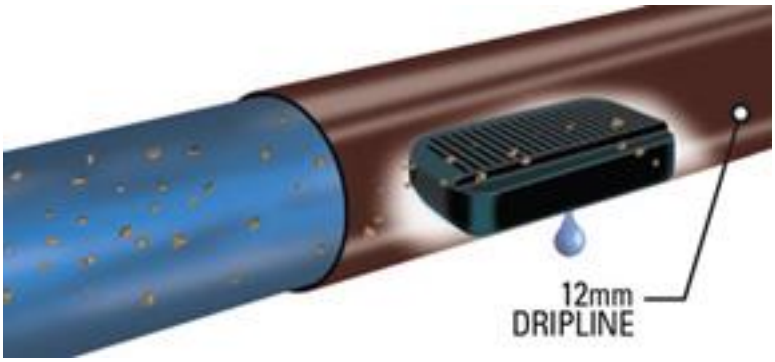
Rick only uses shade cloth for cuttings in the summer and for potted roses on his concrete patio. This patio area is where he has lost most of his roses in past summers.

No shade cloth is used for the rest of the garden. There is not much shade in the backyard from trees.

Roses in the ground are basically protected by their own foliage and by the canopy of shade from other roses. Most of his roses in the ground are grafted on Fortuniana and spaced four feet apart.

He makes sure all of his roses get plenty of water twice daily during extreme heat early in the morning and in the mid-afternoon.

He utilizes a Netafim EZ drip system with 6 inch emitter spacing within the line and a flow rate of 0.4 gallons per hour.



Netafim EZ Drip System

One section of Netafim line is laid on one side of a line of roses.

At the end of the row, a loop is made as the Netafim goes back toward the line of roses on the opposite side all the way down to the end.

In the summer, the system is turned on 10 minutes early in the morning and 10 minutes in the afternoon. It may be adjusted with more water depending on how plants look.

Pots and cuttings are hand watered.

Rick said he only sprays off his roses once a week to control spider mites.

Mulch is important as well. After he winter prunes his roses, he applies 3-4 inches of mulch on top of the soil surface. By the time summer hits, he feels that the mulch has been depleted by half.

He doesn't fertilize during the summer due to chilli thrips which have become a serious problem in his area.

Rick feels that fertilizer encourages new growth that chilli thrips feast on. He feels chilli thrip infestations with extreme heat have been the reason for some of his bushes dying in the past.

Rick doesn't cut off dead blooms during the summer because of the chilli thrip problem as well.

"Deadheading promotes new growth that chilli thrips thrive on," said Bennett.

"Plus, the spent blooms provide shade.

"Another thing to point out here in the Coachella Valley is that you have a deadly combination for roses with spider mites and extreme heat.

"If spider mites are not eliminated, they defoliate plants. Then the intense sun will hit exposed canes which will be severely burned as the rose bush dies as stems turn black."