

Soil and Micro-Climate

By Charlie Mosse, January 2022

We hear and see the word micro-climate more these days. Why? Because micro-climates can/will make growing plants more challenging or easier depending on where you place your plant(s) in your growing area or micro-climate.

The Royal Meteorological Society has a nice definition which is partially presented here:

“A microclimate is the distinctive climate of a small-scale area, such as a garden, park, valley or part of a city. The weather variables in a microclimate, such as temperature, rainfall, wind or humidity, may be subtly different from the conditions prevailing over the area as a whole...”

The Oxford folks stated this: *“the climate of a very small or restricted area, especially when this differs from the climate of the surrounding area.”*

For us micro-climates are nuances in climate in a small geographic area like Mission Valley vs the areas above Mission Valley or even a smaller area like Mission Hills vs Kensington or Mount Helix vs La Mesa, Escondido vs The Safari Park. Then within those areas are smaller micro-climates depending on which direction an area faces, is the area in a canyon or on a hill.

The next logical reduction in area leads us to our own growing areas whether it be a yard, a balcony, a high-rise heat island, an exposed hilltop, a protected canyon or simply up on a mesa type area. Then the last reduction in area size is this, where exactly do you grow your plants in your own growing area. There are many more nuances in climate to be mentioned but you get the idea micro-climates vary and are small areas, and in some cases they are small niches. But, do keep in mind that the smallest micro-climates are influenced by the climate in the general area and the regional climate.

The time of year also affects the micro-climate in our growing areas. The sun angle changes, the day length changes, the weather patterns change and of course the temperature changes. In the winter, colder nights and days, and short days keep plants wetter longer vs in the summer warmer nights longer days

California has many of them which are very obvious as does San Diego County. Nothing new there....coast, coastal plain, coastal foothills, foothills, mountains, high desert, desert to name the main ones. All of those micro-climates are further broken down into smaller micro-climates by community, within a community, within a neighborhood and the trend continues until you get to your own growing area; one's home or where a collection is curated. Even within one's yard there are smaller micro-climates. Again, this is not new, but to bonsai enthusiasts, understanding the micro-climates in your own growing area and how these micro-climates change with the seasons is very helpful to successful growing, particularly during stressful weather events like excess rain, Santa Ana's, heat spikes and longer lasting heat waves.

There are varying degrees of climate differences among our own members even in the same communities. For instance, Chula Vista goes from East Lake where it is pretty warm and sunny to the coast or marine environment. San Diego city limits has canyons and mesas from a marine environment to fairly warm inland like San Carlos. Carlsbad is marine to coastal to

inland where it bumps into Vista which goes from coastal to inland where it is pretty warm. So when you say I live in Vista, be more specific so you can get more accurate information/advice. Escondido and El Cajon are similar in general. Once you go over the hill from Escondido to the Safari Park the temps are significantly different most of the year. In general, Ramona has similar temps to the Safari Park, not so much Escondido. Then it becomes where one lives in Ramona. The comparisons go on for pages. One can see that just because your bonsai buddy lives in the same city or community does not mean they have the same weather. Most of the time it will be close but many times those differences can make a difference especially during significant weather events.

So what does micro-climate have to do with soil? Sometimes nothing, sometimes something significant. We have varying needs for the trees and plants we grown. Needs vary by genus, species, the stage of development and here they are grown.....micro-climate. We read and hear this all of the time as we search about finding the best way to grow our plants. It is part of our regular conversation.

Standard soil mixes work well. Our club mix or 4 parts pumice: 4 parts scoria: 2 parts bark is used at the Safari Park with obvious great success. Another mix is called Boon mix or 1 part pumice: 1 part scoria : 1 part akadama. There are variations on both of these mixes depending on genus/species of tree and stage of development. The other thing that adds to the fray is micro-climate. Just what is it like on your growing area? John Jackson lives on a hill in Lakeside. It can be hot or cold and windy. But, he has 30% shade cloth over his trees and his house and fences provide good wind protection as does the shade cloth. Now move his trees to the front yard or back yard, the micro-climate changes significantly particularly with the wind.

By the way, J DuPuich of BonsaiTonight just wrote in his regular blog about what one can do when obtaining akadama gets too expensive or unavailable. This akadama situation has been slowly coming about so people are experimenting with other components like diatomaceous earth and other things that can possibly replace akadama. Stay tuned.