



Sharing in the desert

In the area we think of as the desert, there are plants. No big maple trees of more northern and cooler areas, but remarkable plants –Joshua trees, mesquites, cacti, cassias, yuccas, and seasonal flowers –live in harmony with this harsh environment. The desert landscape is not a dense forest of leaves, nor a rippling sea of tall grasses, but rather, a stately parade of individuals growing in unforgiving terrain. With so little nourishment available for plants in



Mesquite trees

Mojave soils, sparse distribution helps them survive.

They look like rugged individuals. Are they really?

We rarely use the term ‘sharing’ in horticulture, but those plants are not surviving because of toughness, but rather because they have created good relationships with other forms of life –even forms invisible to naked eyes.

Plants coexist with microbes in the soil.

Relationships with bacteria and fungi permit plants to obtain bigger

and better supplies of water and nutrients. Without interactions among the various organisms, our beautiful desert could become totally barren – just a lifeless wasteland.

Specialized bacteria (rhizobacteria) take nitrogen from the air and transform it into compounds that leguminous plants use to make the proteins we need for life. Many exquisite desert plants have interactions with these nitrogen-fixing bacteria. Mesquite, acacia, cassia, indigo, bird of paradise and many others are legumes. They permit rhizobacteria to live in root nodules, with the result that they readily obtain essential nitrogen compounds.

In addition to these important associations with bacteria, 80 to 90 percent of all plants on earth have an accommodation with fungi that produce long threads in the soil. These threads obtain critical nutrients and make them accessible to plants, which in turn use them for growth. Plant roots, on the other hand, produce compounds that soil microbes need for their own life and development. These plant-fungi arrangements are called ‘mycorrhizae.’ In the desert, creating them is a matter of life and death for those plants we admire.

These fungi even help plants interact with each other. Different plants have different needs and resources, and fungal threads serve as highways to deliver assets from one plant to another. You might say they are sharing the wealth, so all are helped. Our own landscape plants may also rely on similar affiliations for their well-being.

Some Internet sites sell fungal spores to get the associations started, but this is not a “one size fits all” kind of situation. Plants and fungi are selective about their relationships. Not all fungi will benefit all plants, so it might be just as well to use some native soil and promote the population of existing fungal spores.

To keep native plants alive and perhaps benefit our own landscapes, protect these associations with necessary microbes. Pesticides can cause them real damage. If you must use a fungicide or an herbicide (weed killer), be very careful. Read the label to make sure you are using the right product for your problem. Call the Cooperative Extension gardening helpline before applying any chemical that might kill critical bacteria or fungi.

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