



HOT WEATHER AND PLANTS

Plants need strategies to deal with the heat too

Sigrie Kendrick - Aug 16, 2023 / 11:00 am



Photo: Judie Steves

Pineleaf Penstemon or Penstemon pinifolius has adapted to drought by having narrow leaves which reduce the surface area for water loss. This is just one strategy used by xeriscape plants to survive drought.

Adaptability and climate-resilience are essential to survival for plants that are native to the Okanagan Valley's arid climate, with its hot summers and low rainfall.

But escape from death under a blazing summer sun can be achieved in a variety of ways.

Biologist Josh Smith is general manager of XEN Nursery in West Kelowna, which grows and propagates native and xeriscape plants for use through the Okanagan on ecological restoration projects. He is also a member of the board of the Okanagan Xeriscape Association.

He explains drought resistance can be achieved in a number of ways, including escaping drought; avoiding drought and tolerating drought. A common tactic xeriscape plants employ is to cleverly skip the dry summer months entirely, by blooming during the moist spring months and quickly setting seed for the next generation, before dying back until the next fall or next spring.

Good examples of this strategy in the Okanagan native plant world are the City of Kelowna's official flower, the Arrow-leaved Balsamroot or Balsamorhiza sagittata.

These cheerful yellow sunflowers bloom in masses on the hillsides in early spring, then the big arrow-shaped leaves curl and dry up during the hot summer. However, the plant lives on underground, storing moisture in its deep tap root, ready to sprout new green leaves with winter snowmelt, longer days and in the spring rain and sunshine.

Spring bulbs fit in this category as well, shooting up in the spring from the nourishment stored from the previous year in their bulbs or corms; blooming lustily for a few days or weeks, then slowly dying back to ground level as the weather warms up.

During their short lives above ground they bloom, set seed, store nourishment underground, and disperse seeds to ensure a new population is created.

Smith says the second adaptability trick plants use is to avoid drought by maintaining a high water content, either by minimizing water loss or by maximizing water uptake.

One method is to reduce the amount of sunlight that can enter the leaves, which decreases light reactions and associated water use.

Such plants include those with silvery or dusty foliage such as the native Rabbitbrush or Ericameria nauseosa, or the Pearly Everlasting or Anaphalis margaritacea.

In the garden, a great ornamental example is Silvermound or Artemisia schmidtiana.

Drought avoidance is illustrated also by plants with deep tap roots which are thus not susceptible to surface drying of the soil. Native plants which are good examples are the Arrow-leaved Balsamroot, which is also a Drought Escape Artist, Yarrow or Achillea millefolium and Brown-eyed Susan or Gaillardia aristata.

In our gardens, good examples are domestic cousins of the native gaillardia and yarrow family plants, as well as such plants as the Missouri Evening Primrose or Oenothera macrocarpa.

Succulents fit into the drought avoidance category as well, storing water in their fleshy leaves or stems and reducing the surface area to minimize water loss and keep cool.

Cactus fit into this category, as well as agaves, Hen and Chicks or Sempervivum and a huge family of plants that are both native and are propagated for garden use: the sedum or stonecrop family. This includes low-growing Sedum divergens and two-foot tall Sedum Autumn Joy or Autumn Fire, as well as the native Sedum lanceolatum.

Lastly, Smith says drought tolerance is a tactic used in either morphological (shape and form) or physiological (how they interact with the environment), or biochemical ways (changes to their internal body chemistry and pathways).

Many plants have more than one adaption.

A great expression of a morphological adaptation that xeric plants use is to have narrow leaves which reduce the surface area for water loss. A good garden example is the Pineleaf Penstemon or Penstemon pinifolius and another is Russian Sage or Perovskia atriplicifolia (which also has a long, deep tap root to search for water).

When selecting plants for your garden, keep in mind these various strategies plants use to survive heat and associated drought conditions and look for plants that use these strategies so they will survive in your landscape.

Coming up

Such xeriscape perennial plants will be offered for sale to the public at the OXA fall plant sale set for Sept. 23, from 10 a.m. to 2 p.m. in the OXA demonstration garden, the UnH2O Garden, in front of the H2O Aquatic Centre in Kelowna.

I will feature some of the plants that will be available for purchase in upcoming columns.

Especially with our current drought situation, be sure to visit the www.makewaterwork.ca website and take the pledge to use water more efficiently on your landscape, and become eligible to win one of two \$500 gift certificates.

The UnH2O demonstration garden at 4075 Gordon Drive is looking spectacular right now, so stop in and see first-hand the beauty, resilience, and sustainability that is xeriscape.

The Okanagan Xeriscape Association is grateful for the ongoing financial support of the Okanagan Basin Water Board and is proud to be collaborating with them on their Make Water Work campaign.

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