



## Xeriscaping- A Water Saving Land Scaping Method

(\*Dr. A. Nirmala)

Department of Horticulture, College of Agriculture, Hyderabad, Professor Jayasankar  
Telangana State Agricultural University, Rajendranagar, Hyderabad

\*Corresponding Author's email: [nirmala.puli@gmail.com](mailto:nirmala.puli@gmail.com)

Xeriscaping is the process of landscaping or gardening that reduces or eliminates the need for supplemental water from irrigation. It is promoted in regions that do not have accessible, plentiful or reliable supplies of fresh water and is gaining acceptance in other regions as access to irrigation water is becoming limited. Xeriscaped landscapes can reduce water use up to 60% or more compared to regular lawn landscapes. Green spaces are very important, but due to climate change and other problems like decreased water resources the green spaces are being reduced in number so xeriscaping is an alternative approach to increase the number of green spaces mainly in water scarcity areas. The goal of xeriscaping is to create a beautiful landscape in water-scare areas. Some areas use terms like water-conserving landscaping, drought-tolerant landscaping, and smart scaping instead of xeriscaping.

xeriscaping necessitates low-cost maintenance, the use of drought-resistant or tolerant species and the use of fewer fertilizers and herbicides, all of which contribute to environmental conservation. This method of arranging green spaces is ideal in areas where water is scarce or where climatic conditions necessitate the use of large amounts of water for irrigation (areas with seasonal fluctuations of precipitation and heavy droughts). The implementation of principles in xeriscaping can reduce water consumption in the exterior by up to 50%. A simple change in the irrigation scheme can result in significant savings. Xeriscaping creates low-maintenance, low-irrigation greenspaces that promote biodiversity; however, due to societal norms and a lack of landscape understanding, public perception of xeriscaping is frequently negative, with some assuming that these types of landscapes are ugly expanses of just cactus and gravel. However, studies have shown that educating the public about water conservation practises and the benefits of xeriscaping can significantly improve the public's perception of xeriscaping.

### Plant selection

Plants suited to xeriscaping are sometimes referred to as "xeric" plants. These are plants with low water requirements and therefore withstand drought well. They may be of various types such as: 1. Drought tolerant trees 2. Drought tolerant shrubs 3. Drought tolerant ground covers The most common example of a xeriscape-friendly plant is the cactus, which has hundreds of different species that are native to North and South America. Cacti have evolved many physical adaptations that conserve water. For example, their prickly spines, the cactus version of leaves, protect the plants from water-seeking animals. Their large, round stems have thickened to store large amounts of water. Their waxy skin reduces water lost to evaporation. Barrel cactus – *Ferocactus wislizenii*, Spiny star- *Escobaria vivipara*, Christmas cactus- *Schlumbergera*.

The plants used in xeriscaping includes Agavaceae (*Agave*, *Nolina*, *Yucca*), Alliaceae (*Allium*), Amaryllidaceae (*Brodiaea*, *Dichelostemma*, *Triteleia*), Asclepidaceae (*Asclepias*), Asteraceae (*Artemisia*, *Erigeron*, *Senecio*, *Haplopappus*--*Ericameria*, *Hazardia*, *Isocoma*), Cactaceae (*Opuntia*), Crassulaceae (*Dudleya*, *Sedum*), Cyperaceae (*Carex*), Ericaceae (*Arctostaphylos*), Fabaceae (*Astragalus*, *Lupinus*), Fagaceae (*Quercus*), Grossulariaceae (*Ribes*), Iridaceae (*Iris*, *Sisyrinchium*), Hydrophyllaceae (*Phacelia*), Lamiaceae (*Lepechinia*, *Monardella*, *Salvia*), Liliaceae (*Calochortus*, *Lilium*), Malvaceae (*Malacothamnus*, *Sidalcea*, *Sphaeralcea*), Poaceae (*Festuca*), Polygonaceae (*Eriogonum*), Ranunculaceae (*Aquilegia*, *Delphinium*, *Ranunculus*), Rhamnaceae (*Ceanothus*, *Rhamnus*), Rosaceae (*Adenostoma*, *Cercocarpus*, *Heteromeles*, *Holodiscus*, *Prunus*, *Purshia*, *Rosa*, *Spiraea*), Saxifragaceae (*Heuchera*) and Scrophulariaceae (*Penstemon*).

Species include *Rhamnus californica*, *Erigeron glaucus*, *Ceanothus maritimus*, *Quercus chrysolepis* and *Juniperus communis*.

Native plants have largely been ignored in urban landscapes designs, are becoming increasingly popular because of their ability to adapt to harsh environmental conditions (Ochoa *et al.*, 2009).

Many factors contribute to drought tolerance, or lack of drought-tolerance in ornamental plants, as reported by Chapman and Augé (1994) for four native ornamental perennials widely used in gardens and landscapes (*Echinacea purpurea*, *Rudbeckia fulgida*, *Monarda didyma* and *Helianthus angustifolius*) (Franco *et al.*, 2006).

Trees	Shrubs	Annuals	Perennials
1)Smoke tree	1)Acacia	1)Cosmos	1)Asters
2)Japanese black pine	2)Aralia	2)Desert dragon	2)Baby's Breath
3)Honeysuckle	3)Bottle Tree	3)Sunflower	3)Pancy
4)Snowberry	4)Common Olive	4)Pentas New Look	4)Gayfeather
5)Mountain Currant	5)Juniper	5)Zinnia	5)Iris
6)California Lilac	6)Gray Dogwood	6)Santolina	6)Sweet William
7)Heather	7)Amur Maple	7)Vinca Passion	7)Poppy Mallow
8)Rugosa Roses	8)Black Locust	8)Portulacca	8)Lavender
9)Witch Hazel	9)Eucalyptus	9)Statice	9)Perennial Flax
10)Bayberry	10)Gray Birch		

**Succulents (Colourful leaves):** *Aconiumarborium* (Green leaves), *Cotyledon orbiculata* (Gray-green, red-edged), *Crassula argentea* (Sunset', yellow, tinged red), *C. 'Campfire'* (Green, turns orange-red with maturity), *Dudleyabrittonii* (Chalky blue), *Echeveria agavoides* 'RubyLips' (Green, tips reddish brown), *Kalanchoe pumila* (Lavender), *Sedum adolphii* (Orange, bronze), *S. rubrotinctum* Aurora (Pink to bronze), *Sempervivum tectorum* (Gray-green, tipped reddish brown), *Senecioserpens* (Blue-gray), *S. mandraliscae* (Blue-gray), etc.

**Succulents (Colourful flowers):** *Aconiumfloribundum* (Yellow), *Aloe aristata* (Orange-red), *A. saponaria* (Orange to pink), *A. vera* (Yellow), *Bulbinecuulescens* (Lemon), *Crassula falcate* (Deep red), *C. multicava* (Pink), *Delospermacooperi* (Purple), *D. nubigenum* (Golden yellow), *Echeveria elegans* (Pink), *E. Imbricate* (Orange-red), *E. pulvinata* (Red), *E. Setoliver* (Red and Yellow), *Kalanchoe pumila* (Lavender), *Lampranthusproductus* (Purple), *L. aurantiacus* (Orange), *L. spectabilis* (Pink, red, purple).

**Ornamental grasses:** There are some ornamental grasses which are drought resistant and require low maintenance. They can be categorised as:

a) **Cool-season grasses:** They grow best at temperatures ranging from 15 to 24 degrees centigrade (59 to 75 degrees Fahrenheit). New growth starts as soon as temperatures rise above freezing in spring, in temperate climate zones. Growth slows down and flowers bloom by early summer.

b) **Warm-season grasses:** They prefer temperatures ranging from 26 to 35 degrees C (78 to 95 degrees F). New growth begins after the soil warms up to 16 degrees C. Growth slows down and flowers start to bloom by mid-summer, and continuing through fall.

c) **Running-Growth Habit:** Running grasses are useful for erosion control on slopes or as ground cover. They may be slow creepers to aggressive spreaders.

d) **Clumping-Growth Habit:** These grasses grow in tufts. They make fine specimens and are also effective planted in groups or masses. Most ornamental grasses commonly used in gardens today are clump-forming.



## References

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2. Ochoa, J., Munoz, M., Vicente, M. J., Martínez-Sánchez, J. and Franco, J. A.(2009). Native ornamental species for urban landscaping and xero-gardening in semi-arid environments. In II International Conference on Landscape and Urban Horticulture 881 (pp. 425-428).