

INTRODUCTION: LOW WATER USE PLANTS FOR SANTA FE

This is a list of plants that can be expected to grow acceptably under low to moderate water use conditions in the Santa Fe area, given proper siting and care. A list like this is very difficult to create in the current situation; it is impossible to accurately predict how the climate will change here in the coming decades and exactly how this will affect the plants we use in our gardens. Most people who study the issue expect temperatures to increase during both the growing season and in the winter. Though late frosts in April still seem likely, first frosts in the fall seem to come more often now in late October or early November, extending the growing season. The effect of warmer temperatures and a longer growing season is to create a greater need for water over a longer time. Plants that may have gotten by with very little irrigation when the climate was cooler and wetter and the season was shorter may need more frequent irrigation and substantially more water overall in order to stay healthy.

Predictions for precipitation patterns vary widely, though drier winters and smaller snowpacks are a common expectation, which will create more stress on plants coming out of dormancy and facing hot dry weather in May and June. Precipitation during the growing season may be more likely to come as infrequent downpours between long dry spells. Using techniques to maximize the beneficial effects of natural precipitation and supplement it in all feasible ways will be important. Working with the land to direct and hold water, collecting and storing rainfall and irrigating with it later, and exploring the use of alternative sources (grey water, effluent, etc) will all be important for keeping our landscapes healthy.

This list is not intended to be used to limit plant selection, but to serve as a guide for those who want to know more about reasonable choices for this area. Some trees that fit the criteria of low water use (*Fraxinus* species <Ash>, *Gleditsia triacanthos* cultivars <Honeylocust>, and *Robinia* species <Flowering Locust>) have been omitted due to the expectation that pest pressures will make their use and survival questionable. For those who wish to experiment with plants not listed here, I urge you to find out all that you can about the plants' expected hardiness, cultural requirements (especially heat and drought tolerance), and potential problems. The plants are listed in columns by type, botanical name, common name, water needs, cautions, and comments. When the terms "cultivars", "selections" and "forms" are used, it indicates that there is more than one variety of that plant sold.

Abbreviations used for the type of plant listed are as follows: dt and ds indicate "deciduous trees" and "deciduous shrubs", respectively; et and es stand for "evergreen trees" and "evergreen shrubs"; v is for "vines"; p/w is for perennials and wildflowers; and g is for grasses. The difference between "shrubs" and "trees" is an arbitrary one, especially with many native plants. Some plants that might be thought of as shrubs in their younger years or on poor sites can develop into 18-25' plants in time on good sites. The category listings reflect the ways these plants tend to grow on most sites in Santa Fe.

Water needs categories include a range of suggested watering frequencies. Plants in the "Low" water needs category may grow well on a favorable site being watered only once a month. The same plants in a more stressful situation may need to be watered every two or three weeks to stay healthy. Also, two water needs categories are listed for each plant to indicate how water needs might change in relation to a prolonged drought, especially as temperatures increase in the future. Plants may survive with watering frequencies suggested in the lower use category, but they may need to be watered at the more frequent rates listed for the higher use category in order to grow well. Generally speaking, plants that are healthy and growing under conditions that produce moderate annual growth tend to be more drought tolerant than plants that are pushed to grow at maximal rates.

Supplemental irrigation frequencies suggested are only a guideline meant to be used after new plantings are well established, typically from the second or third season on; most plants need more frequent irrigation during the initial establishment period. Large trees may need more frequent irrigation for additional years before these guidelines apply. These suggested supplemental watering frequencies are meant to be applied during dry spells when there is no significant natural precipitation.

Water needs categories are as follows:

VL (Very Low) is for plants that require little or no supplemental irrigation to grow acceptably once they are established. Most of these are native to a southwestern environment. During hot dry summers they may need a thorough watering every four to six weeks to stay healthy. The next category,

L (Low), is for plants that usually need some supplemental irrigation to remain pest and disease free and reach their highest potential in the landscape. They grow well with relatively infrequent irrigation, typically every two to four weeks through the growing season. The third category,

M (Moderate), is for plants that need regular irrigation to grow well here, typically every seven to fourteen days during the growing season. These plants may also need supplemental irrigation monthly during dry winters.

Caution categories are listed to help alert buyers to potential problems that certain plants may develop, especially if they are not sited in favorable locations and maintained in good health. The importance of matching the plant to the conditions of the site cannot be overstated; the right plant in the right place is naturally healthier and more pest and disease resistant. If you want to use plants with cautions applied to them, investigate what is meant by the caution category and what that means in regard to using the plants on your site.

The caution categories are as follows:

"Al" stands for alkaline-sensitive; these plants may develop iron and other trace mineral deficiencies and grow very poorly (or even die) in soils which are highly alkaline.

"Exp" is used to denote plants considered experimental in Santa Fe. Some of these are new introductions to the nursery trade, while others have not been used widely enough or long enough in the Santa Fe area to know what their cultural limits and needs are here. Plants that are rated hardy to zone 6 are "experimental" in the colder areas around Santa Fe. Some of the perennials labeled "Exp" are native wildflowers that haven't been used in gardens enough to know how they will grow under cultivation.

"I" is for plants which tend to be invasive under certain conditions. Though many plants naturally spread to form clumps, these plants can easily get out of hand in certain locations and crowd out or overrun other plants near them. Some of these are useful for stabilizing slopes and rough areas, but they must be sited very carefully.

"P/D" stands for pest/disease potential. Plants marked with this notation have a high likelihood of developing significant problems with pests and/or diseases when they are grown under less than optimal conditions. Rabbits and deer are some of the most problematic garden pests here and often require special control measures where they are common; they will often eat plants listed on "rabbit-resistant" and "deer-resistant" plant lists during droughts.

"Sh" is for plants which either grow naturally in shadier environments or are easier to grow and most drought tolerant when they are planted where they receive some shade, especially afternoon shade. The plants in this group also typically do best in locations where they are sheltered from high winds and heat-reflecting surfaces.

The Comments section includes other information useful in helping to decide whether or not to use certain plants. This list reflects the recommendations and opinions of the authors at this point in time, and will be updated periodically as conditions change.

Tracy Neal April 2017