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IF-2 Successful Gardening in Northern Nevada

Key Points

- Gardeners in northern Nevada face 3 challenges – climate, soils and water.
- Low humidity, fluctuating temperatures, heavy calcareous soils and dry winds restrict plant growth more than low temperatures. The key to northern Nevada gardening is to select plants that tolerate our soil and climate conditions.
- Patient gardeners who know how to select plants that grow here and learn how to manipulate, manage and understand their microclimates will be amply rewarded.

Gardening in northern Nevada (the Truckee Meadows, Carson City and surrounding area) can be a challenging and often intimidating experience. This area is high desert with extreme fluctuation of night and day temperatures. It has high intensity sunlight with generally low humidity. The area is influenced by the Sierra Nevada (mountains) to the west. These features combined with rapid and extreme weather changes, early warm up, late killing frost, short 90 to 100 day growing season and poor soil conditions further exacerbate our three gardening challenges of soil, water and climate.

Climate

Our climate can vary drastically season to season, night and day and even change within an individual yard. Often we will experience frost when the plants aren't ready to cope with it. This situation is most common with a late frost after an early spring warm-up. These frosts are influenced by air drainage from the Sierra Nevada. This air drainage can also make a difference in location of plants in a garden. Gardens in areas where cold air is trapped may experience earlier or later frost than locations a short distance away. Cold air may be trapped by any obstruction on the down slope of the yard such as a hedge, wall or solid fence. The outlying valleys surrounding the Truckee Meadows, especially the north valleys, experience more snow and colder temperatures. Average killing frosts are May 15th (last annual frost day) and September 15th (first annual frost date). A wise gardener will recognize these dates and use appropriate protective techniques to reduce damage to plants.

Soils

Temperature is only one factor that determines plant survival in this area; rarely is extreme cold the limiting growth factor. Combinations of low humidity, drying winds and physical and chemical properties of the soil influence how plants will perform and how they should be watered. Most of our soils are heavy, tight clay soils devoid of organic matter and nutrients. Furthermore, they are alkaline. In some areas of northwestern Nevada the soils are affected with sodium salts as well as by very poor drainage or a high water table. Soil modification is a problem in these semi-arid, highly alkaline soils. In some areas the soils are deep sands.

Organic matter is the key to reclaiming both types of soils. The soil in a few cases along the east side of Reno and Sparks north from Virginia City Highway thru Spanish Springs is affected by sodium salts. These salts destroy soil structure thus further restricting drainage. (See Successful Gardening at Double Diamond Fact Sheet.) Where sodium affected soils are present, gypsum may be used in large quantities (50 to 75 pounds per 1,000 sq. ft.) to help increase soil aggregation and improve drainage.

Organic material should be added to both clay and sandy soils to help improve drainage and airflow and to retain moisture and nutrients. Once drainage has been improved a gardener may be able to leach the soluble salts down below the root system. However, drainage problems are often deep and caused by a high water table which may be very difficult to change. Tile or gravel drains might be necessary in extreme cases. Rates of organic matter will depend on the type of organic matter. General recommendations for new turf areas are no more than 2 inches and up to 3 to 4 inches for flower and vegetable gardens. The addition of organic matter annually is also recommended for these gardens.

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The soils in the western Nevada area are also low in nutrients and nitrogen; phosphorus and potassium are usually needed along with iron. Our high pH soils will render iron unavailable to plants. A gardener in this area should be aware of iron deficiencies or chlorosis. Plants with high iron requirements such as pin oak, silver maple, hawthorns and roses will perform poorly.

Water

Water is also a limiting factor as this area experiences many drought years. Plants must be chosen for their drought tolerance and ability to survive with limited irrigation. The gardener must learn how to water wisely and efficiently using drip irrigation. Proper watering techniques or scheduling is necessary to allow deep-water infiltration in our tight clay soils. Usually a slow on and off schedule is recommended. Overwatering of new plants is very common. Applying water too fast or too long to turf areas will result in wasteful runoff and overwatering.

The gardener should be aware that this area will receive only 6 – 8 inches of annual precipitation and the humidity will be low. There are many dry winters with limited moisture, dry air and high sunlight. Winter watering should be considered, especially with conifer and broadleaf evergreen.

As hopeless as this may sound, gardeners don't need to throw up their hands and say, "What's the use?" Once they learn to deal with the climate, modify soils and use water efficiently, there is a bright side. The many days of sunshine, while lending to some problems, enable gardeners to grow some of the best flowers, vegetables and turf in the nation. This high intensity produces strong healthy plants. The cool, crisp nights and warm days produce great lawns and excellent cool season vegetables. The lower humidity not only makes the cold seem less cold and hot days less hot, it also discourages many plant diseases that are common in a humid environment.

The brightest star is the challenge of growing. Gardeners who are PATIENT, select plants that do well and manipulate the soil and microclimate will be amply rewarded.

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