



EXTENSION

College of Agriculture,
Biotechnology & Natural Resources

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THE ROSE IN THE DESERT SOUTHWEST

Linn Mills, Las Vegas Valley Rose Society

Wayne S. Johnson, Ph.D., State Horticulture Specialist

Angela O'Callaghan, Ph.D., Area Extension Specialist, Social Horticulture

INTRODUCTION

No matter what the climate - the range of temperatures, the levels of precipitation, and the amount, or even the lack, of sunshine - people want roses blooming in their yards. There are about 100 species, and thousands of cultivars, of this flower, and even here in the parched Mojave Desert they can be desirable additions to the garden. It's astounding how well roses actually do in this arid climate. Possibly some roses have been over-bred and maybe overfed, but they're beautiful and strong flowers.

The rose became the national flower in 1986. George Washington bred roses and a variety he named after his mother is still grown today.*

Roses need morning sun, afternoon shade and a minimum six hours of full sunlight each day to produce abundantly and reach their peak quality. This publication discusses selection, soil preparation and planting, monthly care, pruning, and disease problems for growing roses in the desert.

SELECTING ROSES

Roses can be purchased in containers or as bare root stock (plants without soil around the roots). In the desert Southwest, gardeners can plant container roses anytime except during the heat of summer. Bare root roses are planted from December to mid-February. Planting bare root roses after mid-February has proved unsuccessful.

Select only graded No. 1 roses for best results. A No. 1 rose has three or more canes that are 14-18 inches long. On bare root roses, the buds and canes must still be dormant.

Do not buy and plant wax-coated plants in the desert Southwest. The wax does protect buds and canes from desiccating, but warm weather and intense sunlight can cause heat to build up under the wax and kill the plant.

There is a list of proven roses for the Southwest available from the local UNCE office. It includes shrubs, climbers, hybrid teas, miniatures and grandifloras.

* *Symbols of U. S. Government: National Floral Emblem - The Rose*. Retrieved September 4, 2003, from the Superintendent of Documents, U. S. Government Printing Office Web site: <http://bensguide.gpo.gov/3-5/symbols/rose.html>.

SOIL PREPARATION

Dig a hole 2 feet deep and 2 feet square in an area free of shrub and tree roots. Check drainage by filling the hole with water. If the water remains in the hole for more than six hours, there is poor drainage. Dig deeper until the water drains. Remove or fracture restrictive layers such as caliche to allow drainage, which is critical. Desert Southwest soils are extremely low in organic matter. Improve the soil by thoroughly blending equal amounts of organic matter with the native soil. To this matter, add a half cup of superphosphate (0-20-0) and a cup of sulfur. Experience shows that one-half cup of blood meal or one cup of cottonseed meal is beneficial as well.

PLANTING BARE ROOT ROSES

Twenty-four hours before planting bare root roses, soak the entire rose in a solution of water and root stimulator. Before soaking, prune any damaged roots. Strip off a quarter-inch of each of the remaining roots to stimulate new root growth. Prune canes to a plump outward-facing bud and leave canes no more than 6 to 8 inches long.

Partially refill the previously dug hole with the prepared soil. Shape the soil into an inverted cone as you approach the soil surface. Set the rose crown (the bump where the roots and canes come together) on the cone. The crown must be two inches above the soil surface grade when soil has settled.

Spread roots symmetrically around the cone. Work the prepared soil through the roots and gently firm the soil. Also add water to the hole to settle the soil. Build a reservoir around the bush after planting and water again. Then drench roots with a root stimulator.

PLANTING A CONTAINER ROSE

Remove the rose from the container and examine its roots. If the roots are tangled, cut the root ball in half with a sharp knife. Place enough prepared soil in the already dug hole so the crown will sit two inches above the soil surface after planting. Spread the two halves in the bottom of the hole in butterfly fashion and add the remaining soil. After planting, add water to settle the soil. Also build a reservoir or berm around the rose for irrigation. Cover all exposed roots with at least two inches of soil, and firm with foot or hand. Add a prepared root stimulator before irrigation.

After planting, prune canes back to approximately 8 to 12 inches. Make the final cut above an outside facing bud so new growth can develop outward. Remove all weak canes by cutting them back to the crown.

Do not fertilize new roses with nitrogen until after the first blooms!

CARE AFTER PLANTING

Hot spring winds dry out new emerging canes. To prevent this and to stimulate new growth, cut the bottom out of a five gallon plastic container and place the container over the rose. Fill it with coarse mulch. Leave the container in place and keep the mulch moist until shoots emerge. Remove the container and let irrigation water erode the mulch away.

Mulch roses to conserve moisture, lower the soil temperature and control weeds. Sprinkle two tablespoons of nitrogen (21-0-0) in the mulch under each rose to replenish the nitrogen lost to microorganisms decaying the organic matter.

FERTILIZING ESTABLISHED ROSES

Nitrogen, phosphorus and potassium are the major nutrients required in large amounts to produce quality roses. Trace elements such as iron, magnesium, manganese, boron, zinc and sulfur are also essential. However, Southern Nevada soils are high in boron and it should not be added. Use all-purpose rose fertilizers or trace element supplements to supply these nutrients. Organic fertilizers such as blood meal, fish emulsion, etc., can also be used.

Spread fertilizer evenly over soil, starting six inches from the trunk and ending twelve inches beyond the bush's drip line. Lightly scratch nutrients into the soil to avoid injury to shallow roots. Irrigate before and after fertilizing to prevent burning. When using any fertilizer, always read the label and **FOLLOW DIRECTIONS!** Use foliar fertilizers in the early morning or late evening to avoid burn. These foliar fertilizers provide quick results, but do not replace soil fertilizing.

IRRIGATION

Proper irrigation is necessary to produce quality roses in the desert Southwest. Irrigate to the bottom of the root zone (about 18 to 24 inches deep) with each watering. Check irrigation depth by pushing a steel bar or a long screwdriver into the soil. Where it stops indicates how deep the water penetrated. Deep, infrequent waterings allow air to return to the soil between irrigations, encourages roots to grow deeply, avoids root rot and flushes away salts. Light, frequent irrigations cause shallow root growth which leads to water stress during the summer or windy periods.

Determine when to irrigate again by testing the soil 2 inches below the bush's canopy. If the soil is moist, wait a few days and test again. If it's dry and crumbles to the touch, irrigate.

COMMON DISEASES AND INSECTS

POWDERY MILDEW is a disease that looks like powder on the leaves and flowers. It's caused by a fungus that appears everywhere people grow roses, but it shows up here once the humidity gets a little high so controlling the disease can be tricky. Some varieties are more resistant than others. There's work being done on biological control, and salinity to soil. Prevention is always the most important thing. Make sure that the plants are in places where there is morning sun, and irrigate them in the morning. Always remove old plant debris so it won't be a source for more disease. Often, the upper surface of the leaf appears normal, but there is extensive fungus growth on the leaf undersurface. Reduce infection by keeping the area around the bush free of debris. Prune out and destroy diseased canes and leaves. Do not plant roses in shaded spots, especially areas which dry out slowly. Thin roses to open up the plant center so air can freely circulate through the foliage. Irrigate early in the morning to prevent the disease and avoid irrigating at night, especially with sprinklers. New growth is especially susceptible to mildew during humid periods.

CROWN GALLS are stimulated by bacteria that form on roots, crowns and stems. They occur on wounds caused by pruning or budding. Gall tissues have no definite growth pattern. The bacteria may live for several years in the soil or on another host before infesting roses. If bacteria is in the soil, replace it with new soil. Prevent infection by sterilizing pruning tools with a 10 percent solution of household bleach after each cut. Remove and destroy seriously infected plants.

IRON DEFICIENCY is a major problem for roses in the desert. The deficiency is evident by interveinal yellowing of young leaves. Veins remain a bright green to contrast with the yellow open leaf areas. The leaf edges or the entire leaf will turn brown if conditions worsen. The plant grows slowly and eventually dies if the problem is not corrected.

Highly alkaline soils, overwatering and/or poor drainage induce iron deficiency. Correct overwatering, improve drainage and supply iron chelates. Plants respond much faster to iron chelates than other iron sources. Foliar applications may cause leaf burn if applied when temperatures are above 85°F. Direct spray to both sides of leaves.

APHIDS are soft-bodied green, brown, black, or red insects that suck plant juices. The tiny insects usually appear in clusters on ends of shoots and buds. They leave behind a sticky honeydew which attracts ants. Spray plants with a strong force of water or use insecticidal soap, or a recommended insecticide to control.

THRIPS are very active, tiny, slender, yellow-brown insects that hide in the base of blooms and leaves. They freckle petals and deform flowers. Damage is far more noticeable on paler colored varieties.

PRUNING ROSES

1. Prune roses to remove dead and diseased wood as well as weak or twiggy growth and crisscrossing canes throughout the bush. Pruning also rejuvenates and shapes the bush. Prune in late January or early February before the plants begin active growth.
2. When cutting back canes, make a diagonal cut one quarter inch above a healthy outside bud. This will encourage the plant to spread out, to allow light and air to penetrate and rejuvenate the plant. The free flow of air through the plant results in better control of powdery mildew.
3. To remove an entire cane, make the cut flush at the crown. Treat exposed cut surfaces with a pruning seal to prevent insects and diseases from entering.
4. After pruning, apply a dormant spray found at all nursery outlets according to package directions containing lime sulfur to help reduce insect infestation the coming year.

Hybrid Tea & Grandiflora: Each hybrid tea cane at the tip will produce one large dominant bloom with smaller secondary blooms underneath. For a larger bloom, remove the secondary buds. The grandiflora which is a cross between a hybrid tea and floribunda, combines bloom quality of the hybrid tea with bloom abundance of the floribunda. Prune climbing hybrid teas and everblooming large-flowered climbers in early spring while they are dormant. Do not take as much wood from the everbloomers as from the climbing hybrid teas.

Depending on the roses vigor, expect larger but fewer blooms if you prune moderately. Conversely, light pruning will give more but smaller blooms. Once you complete pruning, all remaining canes should be equal distance from each other, radiating from the center of the plant.

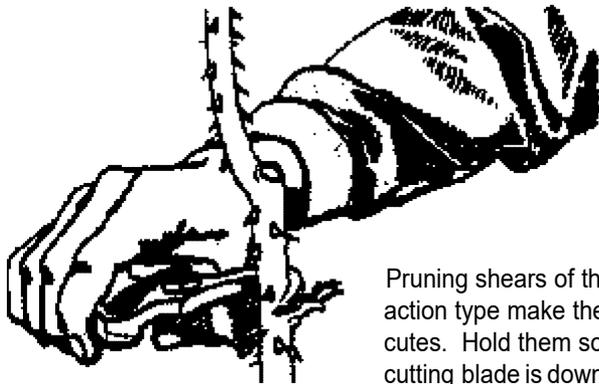
Floribunda: Produces more blooms than grandifloras but they are smaller. They require less pruning than hybrid teas or grandifloras. In this case, reduce the top portion of the plant by one-third. Also remove all weak canes developing from the base leaving only the most vigorous ones.

Miniature rose: They are usually under 1' in height and the flowers are generally less than 1.5 inches in diameter. They need little pruning. Just shape and prune back by one-half any strong canes coming from the base of the plant. During the growing season remove faded flowers back to a strong lateral bud.

Tree Rose: This requires severe pruning to keep the top small and to reduce damage during windstorms. Remove all undesirable wood as suggested for the bush roses and then remove all the remaining canes back to three to four buds. Make these cuts just above an outside bud.

Climbing and rambling rose: These requires only mild pruning. Don't prune any climbers, except to cut out deadwood, for the first two or three years. This will allow them to establish mature canes. Do it right after their spring bloom. This enables the bush to send up new canes which produce flowers next year. Prune out long, unwieldy, unproductive canes back to the crown. Prune back secondary canes which branch along the cane of the previous year to one or two buds. Pluck the faded blossoms off everblooming climbers, but be careful not to take any foliage; the repeat blooms grow from the leaves immediately under the old flower cluster. When removing blooms from climbing hybrid teas, leave two sets of leaves on each flowering shoot.

PRUNING FUNDAMENTALS



Pruning shears of the scissor action type make the cleanest cuts. Hold them so that the cutting blade is down.



Proper cuts slants at almost a 45 degree angle; upper point is 1/8 - 1/4 inch above growth eye, lower point is slightly above level of eye on opposite side of stem.



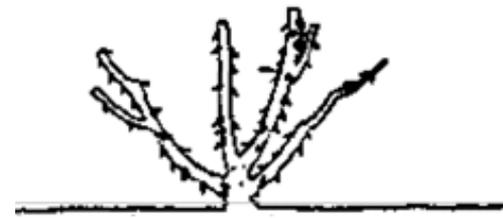
Ready for pruning the dormant bush is leafless or nearly so. Note the amount of stems and the varying thicknesses.



Remove old canes that produce no strong new growth, branches crossing through the bush's center, weak stems. Trim canes.



In mild climates, healthy growth should not be reduced by more than one-third. This is moderate to light pruning.



In areas where heavy winter damage occurs, removed all dead and injured wood, leaving bush only 1/3 - 1/2 the size it was in fall.



Cuts to the bud union should be flush to it; any stubs may die back into the union, allowing later entry for disease. Use pruning saw or lopping shears.



Pruning Climbing Roses

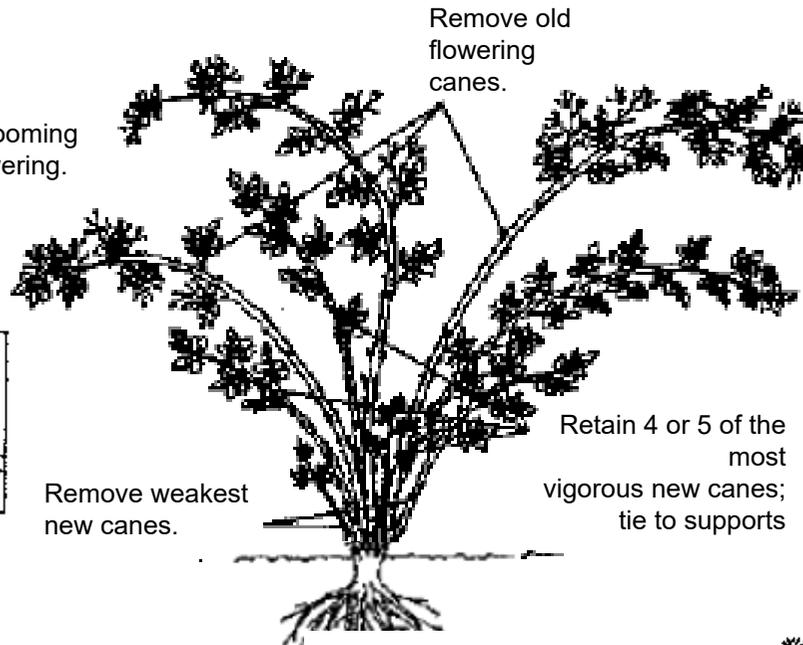
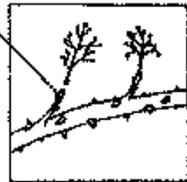
Prune ramblers and water-blooming climbers once they finish flowering.

Cut back to 4 or 5 sets of leaves on each flowering shoot

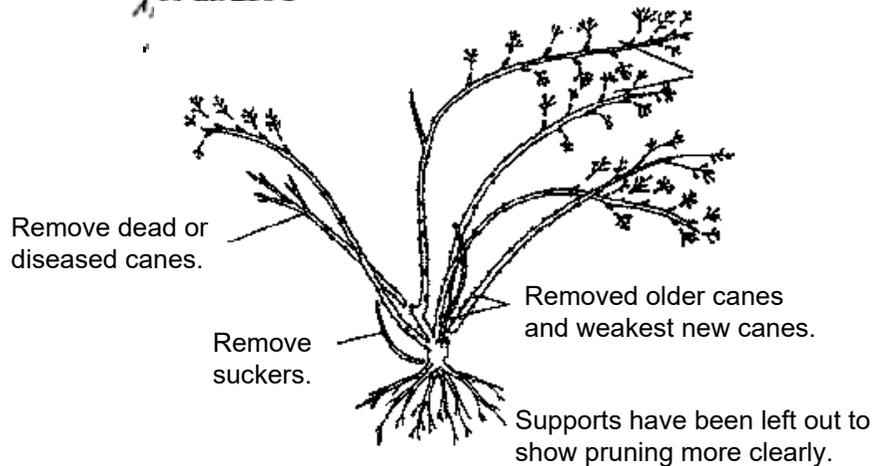
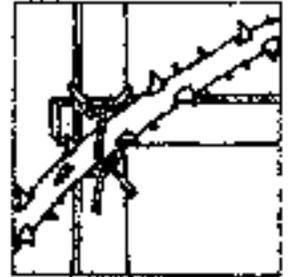


Prune climbing hybrid teas and repeat bloomers while they are dormant.

Cut back to 2 leaf buds on each flowering shoots.



To tie a climber, knot tightly to the support and loosely around the cane.



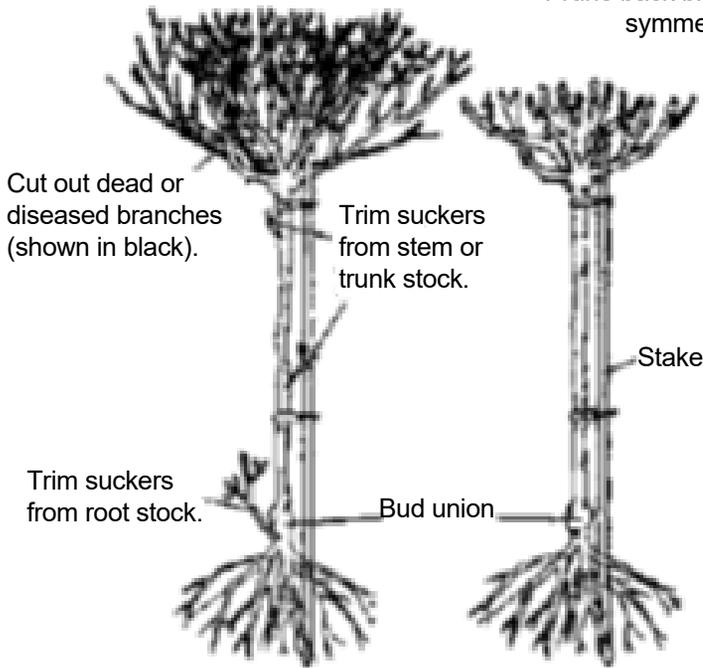
TRAINING CLIMBERS

Train climbers on arbors, fences, pergolas, pillars, or trellises by letting the canes grow long and then arching or tying them in a horizontal position with the tips of the canes pointed downward. This will stimulate the lateral buds to produce a flowering branch instead of concentrating growth in the terminal bud. Shortening some of the long upright canes will stimulate the growth of laterals, which will help to cover the support.

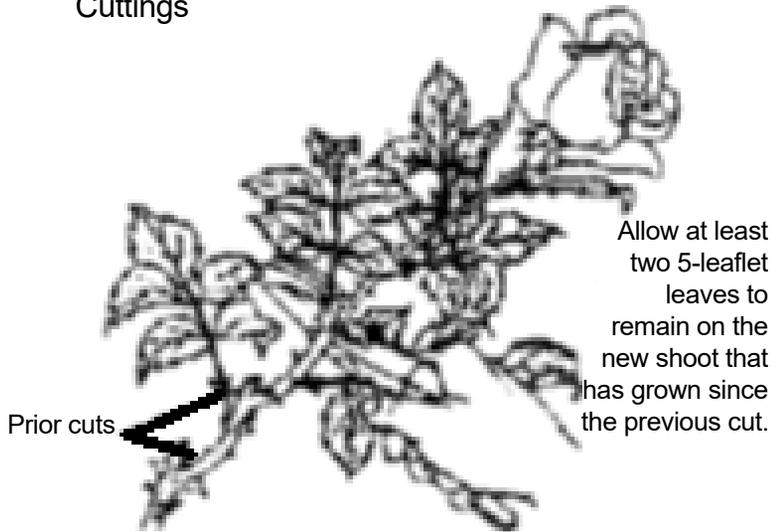
Ramblers and other climbers can be pegged down, or their tips anchored to the ground to produce sprawling plants.

Pruning Tree Roses

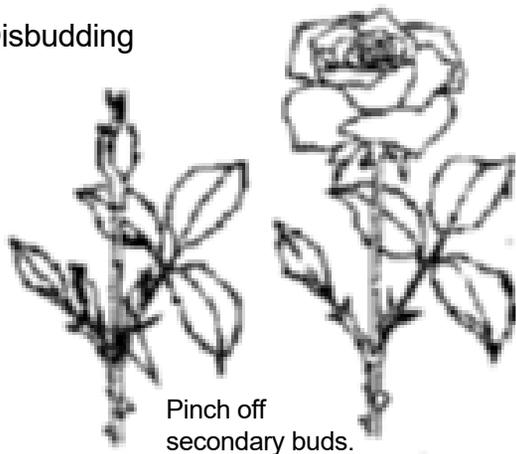
Prune back branches symmetrically.



Cuttings



Disbudding



MONTHLY CARE OF ROSES

JANUARY: Plant bareroot roses this month, but no later than mid February. Plant container roses anytime except during the heat of summer. Strip off old leaves from canes prior to pruning to force the bush into dormancy. Prune roses before they leaf out. Remove debris from the area and spray with a dormant oil mixed with a pesticide to control overwintering pests on bushes and soil.

FEBRUARY: In mid-February, fertilize roses with a balanced fertilizer. Add a cup of sulfur, 1/4 cup of magnesium sulfate (Epson salts) and one-half cup of super phosphate to each established rose to stimulate new cane growth and improve bloom quality. Always water bushes thoroughly before and after fertilizing. Apply a 3-inch layer of mulch to the rose bed after applying the fertilizer.

MARCH, APRIL, & MAY: Continue to fertilize roses monthly with a balanced rose fertilizer. Apply iron chelates as needed to correct iron deficiency. For higher quality blooms, foliar feed with a soluble fertilizer in early April. For larger blooms, remove secondary buds below the lead bud on hybrid teas. For a more uniform bouquet of flowers, on florabunda remove the large center blooms. Water early in the morning to minimize mildew. If possible, avoid wetting the foliage - use drip or soaker irrigation. Use a recommended fungicide if the mildew becomes a problem. Control aphids and thrips with a recommended insecticide. The big rose display occurs from mid-April through May. For fresh roses, cut back to where a cane is strong enough (thickness of a pencil) to support a new bloom. Cut just above an outside leaf (five leaflets.)

JUNE, JULY, & AUGUST: Fertilize roses at one half the normal rate. Yellow leaves indicate iron deficiency - treat with iron chelates. In June, apply one fourth cup of magnesium sulfate (Epsom salt.) Apply one cup again at the end of August. Water deeply once a week or more often if necessary. Remove faded roses after bloom. Apply three to four inches of mulch to the rose beds and sprinkle a light application of nitrogen over the covering to hasten decomposition. Roses produced during the summer are usually half the size of spring and fall roses. Treat powdery mildew and insect-infested roses with the proper sprays.

Beginning in late August, remove all weak and undesirable canes to the crown or base of the rose. Reduce the bush's top growth by one third to stimulate the fall flush of growth.

SEPTEMBER: Return to normal amounts of fertilizer. Also include one cup soil sulfur and one-half cup superphosphate per plant. For higher quality blooms, apply a soluble fertilizer to the foliage every two weeks until buds show color. Spray to control any insects and diseases.

OCTOBER: With cooler weather and shorter days, lengthen the intervals between irrigations, but do not let the root zone dry out. Fertilize with a balanced rose fertilizer and one cup of sulfur to spur on blooms before Columbus Day. The fall bloom cycle begins at the end of the month and continues into December. Foliar fertilize until buds show color. Disbud hybrid teas leaving the terminal buds for higher quality blooms. Remove suckers that rise below the bud union or graft near the soil line. Cut off spent blooms to stimulate flowering.

NOVEMBER & DECEMBER: Irrigate every two weeks if needed. This is an excellent time to prepare new rose beds. Evaluate the roses and discard those that did not perform well to make room for newer varieties. Have the soil tested if there is a suspected problem or roses have performed poorly.

DO NOT FERTILIZE ROSES IN NOVEMBER, DECEMBER, AND JANUARY.

REFERENCES

Adapted and revised from Fact Sheet 89-44, Growing Roses in the Desert Southwest. 1989. Linn Mills. Wayne Johnson. University of Nevada Cooperative Extension, Las Vegas, Nevada.
Desert Rose. KNPR. Desert Bloom. Angela O'Callaghan, Ph. D. 2003.
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For more information:

Master Gardener

Help Line:

702-257-5556

or

Angela O'Callaghan, Ph.D.

UNCE Southern Area Social

Horticulture Specialist

702-257-5581

ocallaghana@unce.unr.edu or

Extension.unr.edu

University of Nevada Reno

Extension

8050 Paradise Road, Suite 100

Las Vegas, Nevada 89123

702-222-3130