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## SUMMER HOURS

6:00 am to 3:30 pm Office  
6:00 am to 2:30 pm Yard/Will Call  
Open Monday through Friday  
Closed Weekends and Major Holidays

## UPCOMING EVENTS / NOTICES

### September 14-16 Arizona Community Tree Council Annual Conference

Hon-Dah Resort and Conference  
Center, Pinetop, AZ  
Info: Call ACTC at (602) 354-3023

### September 20-21 Garden Market Expo, sponsored by the California Association of Nurseries and Garden Centers

Mandalay Bay Convention Center  
South, Las Vegas, NV  
Info: Call (800) 748-6214 x 16 or  
visit [www.gardenmarketexpo.com](http://www.gardenmarketexpo.com)

### October 5-6 Desert Green X in conjunction with the Western Chapter ISA

Sam's Town, Las Vegas, NV  
Info: Contact ML Robinson at (702)  
257-5529 or Helen Stone at (702)  
454-3057 or  
[helen@swtreesandturf.com](mailto:helen@swtreesandturf.com) or visit  
[www.desert-green.org](http://www.desert-green.org).

### October 5-6 International Society of Arboriculture Texas Chapter Annual Tree Conference

Marriott Hotel and Conference  
Center, Round Rock, TX.  
Info: Visit <http://www.trees-isa.org/events/>

### October 16-18 Certified Arborist Training

Sponsored by the Nevada Shade  
Tree Council, with the NV Div. of  
Forestry & the USDA Forest Service.  
Northeast Community Center, Reno,  
NV. Certified arborist exam October  
19.  
Info: Contact Tony Deitz at (775)  
738-3454.

### October 28 Yuma Tree and Landscape Expo

Yuma Civic Center, Yuma, AZ  
Info: Call (928) 373-5200 or visit  
[www.ci.yuma.az.us/parksandrec](http://www.ci.yuma.az.us/parksandrec)

Many of you may not know seven year old Joshua, son of Paul and Meredith Gass, and grandson of Ron and Maureen Gass. In June, Joshua was diagnosed with Leukemia and has now started his courageous battle to overcome this disease. We would like to express our heartfelt thanks to everyone who has offered support to Josh. We also wish to inform you of the Leukemia and Lymphoma Society's Light Night® Walk which will be held on October 20th at the Sahuaro Ranch Park in Glendale, AZ. Please consider walking on behalf of Joshua who will be at the park. If you can not make it, please visit [www.lightthenight.org](http://www.lightthenight.org) and search Meredith Gass to consider a donation on behalf of Joshua. Thank you.

SEPTEMBER/OCTOBER 2006

## Grafting for Success

Grafting has been used for centuries by gardeners to propagate new plants. It is said that the Chinese understood the basics of grafting as early as 1000 B.C., and that the Romans employed grafting to reproduce vital food plants like olives and grapes. Grafting techniques were perfected in Europe during the Renaissance period to produce new plants selections that did not grow "true" from seed or were difficult to root through the use of cuttings.

Horticulturists have continued to utilize grafting methods to unite plants that possess desirable characteristics from each entity. This is particularly important for species that have feeble root systems, plants that are slow to root, or that are overly susceptible to certain soil borne diseases. An example would be the



*Parkinsonia x 'Desert Museum'*

combination of a very attractive tea rose plant that has poorly developed roots with a more robust and vigorous root stock perhaps from "wild" origins. To further demonstrate, our colleagues at Swan Hill Nursery have grafted Swan Hill Olive® to the rootstock of the "Oblonga" olive, a variety with known resistance

to Verticillium wilt. Grafting allows growers to produce a one-of-a-kind clone that can be replicated efficiently and reliably on a non-fussy root system.

Here are the basics of grafting. The understock or **rootstock** is the lower part of the graft with the preferred root system. It is often selected for disease resistance, vigorous roots or in the case of fruit trees a dwarfing habit. The **scion** is the portion of the mother plant that comprises the top part of the graft. It may have numerous desirable qualities such as improved vigor, enhanced floral characteristics, superior fruit, or better-quality foliage (density or fall color). The **union** is complete when the stock and scion develop united tissues that allow for water, nutrient and sugar transfer between the two stems. To be successful the **cambium**

(continued)

layer (actively dividing cell tissue beneath the bark) of the two plants must connect completely and become one at the union.

Graft compatibility is typically determined by relation. In other words, plants must be closely related botanically to graft successfully. Generally only plants from the same family are considered suitable for grafting, and if they are within the same genus or even the same species then the graft is more likely to succeed. For example, sweet orange is often grafted to sour orange, which has a superior root system. Clearly orange and apple trees would not be compatible for grafting, but an orange and a lemon might be. Previous experience working with grafting is the key to success.

There are many types of grafting techniques that are used commercially. The most common method for nursery stock is the whip or tongue graft. We actually use an inverted long-V graft for most of our work. This technique is best for material with a relatively small diameter. The top of the stock plant is severed from the lower portion that contains the roots and the shoot from that plant is discarded. The scion which is selected



***Prosopis glandulosa* Maverick®**

from the mother plant is then placed on the rootstock and wrapped with grafting tape to hold it in place while the union forms. It is essential that the graft combination is completed swiftly and wrapped tightly to ensure that the tissue does not dry out. A thin bamboo stake is useful to keep the whip from swaying too much and severing the bond.

Grafting is a tedious job that requires a keen eye for suitable material, a steady hand, and sharp tools. The craftsmen who do this work use a special one-sided grafting knife to make their cuts. Lining up the cambium layers is essential to achieve a good graft. This why small diameter scions and rootstocks are preferred which ensures cambium contact.

We at Mountain States have employed grafting on several of our select trees to ensure that our plants have all the desired qualities, plus a vigorous root system. One of our newest graft combinations is on Pistache. We have offered Red Push Pistache in our catalog for years. This hybrid of *Pistacia atlantica* and *Pistacia integerrima* has proven to be a fine tree. It is also used as the understock for nearly all the fruiting varieties of pistachio trees because it has excellent resistance to Verticillium wilt. For this reason we chose to use Red Push as the understock of a Chinese pistache introduction by Mountain States known as Sarah's Radiance™. The scions of *Pistacia chinensis* Sarah's Radiance™ are grafted to the hybrid Red Push seedling to increase disease resistance for this selection. The result is a wonderful shade tree with vibrant fall color.

In addition to Pistache we also graft the Desert Museum Palo Verde. This thornless three-way hybrid of *Parkinsonia* species is a wonderful, fast

growing tree with spectacular floral characteristics. We feel that this superior tree performs best if grafted to Parkinsonia seedlings. We find the combination slows the rampant growth a bit allowing the more vigorous root portion to maintain a compatible balance with the hybrid vigor of the top growth. We feel confident that this selection is an improvement over cutting grown palo verde trees.

We have also had excellent results with grafting mesquite trees. For years arborists have been dealing with issues related to mesquite trees blowing over. Often when mesquites are positioned in landscapes they receive an excessive amount of water to sustain normal growth. As a result these trees tend to produce more top growth and an inferior, shallow root system. Without corrective pruning these trees often yield easily during strong storms. We have determined that grafting superior selections of mesquite to native seedlings produces a tree that is in greater harmony with the urban landscape environment.



***Pistacia chinensis*  
'Sarah's Radiance'™**

Mountain States produces two thornless named selections of mesquite. *Prosopis x Phoenix*® is a semi-evergreen clone of South American hybridization. This thornless tree is grafted to native mesquite seedling rootstock resulting in slower-growing, healthier branching structure and a solid root system. The lush green



***Prosopis x Phoenix*®**

compound leaves are typical of other South American selections providing dense summer shade. This selection also has a more upright growth habit making it more conducive to parking areas and the smaller landscape areas common to metropolitan areas.

We also produce a thornless selection of the Texas Honey Mesquite, *Prosopis glandulosa* Maverick®. This delightful tree has a gangly, sprawling habit reminiscent of the California Pepper Tree, with lacy, bright green compound leaves. Coupled with the smooth gray bark, this large shade tree is best suited for open expanses where it can spread its branches. It would be a welcome addition to parks and school campuses. We are pleased to offer this selection grafted to native mesquite seedlings for enhanced rooting and greater stability.

Grafting is an art that requires precision craftsmanship. Properly conducted, the union provides us with superior trees well suited for the environment. Sounds like a perfect match.