



## The Virtual Gardener—Monsoon 2016

After a rough ride through April with spells of alternating hot and cold days, May has finally brought some heat—a dry heat, of course. Now the big question is, “How much rain will we get during the monsoon?” This month I want to share some predictions that appeared in the spring/summer 2016 issue of the Coyote Crier, a publication of the National Weather Service office in Tucson for volunteer weather spotters.

The map in the *Crier*, shows equal chances of above or below average rainfall for our monsoon here in south-east Arizona. This does not mean the National Weather Service is predicting a “normal” or average rainfall. It means that Mother Nature is holding her cards close to her chest and giving us no hint as to what she has in store. Sometimes, like a poor poker player whose facial expressions reveal the kind of cards he holds, she sends us “signals” that telegraph her intentions. At other times, like this year, she leaves us completely in the dark.

In Arizona, the Southwest (AKA Mexican or North American) Monsoon represents a shift in the direction of wind flows from the dry westerly or north-westerly winds that prevail most of the

year to the moist southerly flow that brings us the summer rains.

This shift in the winds results from the interaction of components of a huge and complicated weather machine driven by the sun. This collection of virtual springs, escapements, wheels, and cogs that make up the monsoon “machine” work together in complex ways that are not well understood. Some of the wheels turn on a regular schedule and some turn randomly. Some are always connected together and some connect only from time to time. And to make matters even more confusing, the machine most likely has parts we haven’t yet discovered.

We do know the sun acts as the mainspring that drives this complex system. Air heated by the sun rises over the equator and begins to cool when it reaches the upper atmosphere. At about latitude 30° north and south of the equator this cooler, heavier air begins to fall, creating permanent bands of high pressure that circle the globe, the so-called subtropical ridges. Normally the northern subtropical ridge lies just south of Arizona (our southern border lies along latitude 31° north). But as our

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COLLEGE OF AGRICULTURE AND LIFE SCIENCES  
COOPERATIVE EXTENSION  
Cochise County

**Cochise County Cooperative Extension**  
[www.cals.arizona.edu/cochise/mg/](http://www.cals.arizona.edu/cochise/mg/)

1140 N. Colombo, Sierra Vista, AZ 85635  
(520) 458-8278, Ext. 2141

450 S. Haskell, Willcox, AZ 85643  
(520) 384-3594

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desert heats under the intense summer sun, the heating causes air to rise, creating low pressure that draws the subtropical ridge north over Arizona, bringing moisture from the south and causing our summer monsoon rains.

Meteorologists look for repeating patterns in the operation of the weather machine, hoping to find “signals” that will provide insights into what is likely to happen in the future. Like a poor poker player’s facial expressions, these signals won’t provide exact information but perhaps may provide enough information to help the meteorologists hedge their bets about what might happen next.

One of the signals meteorologists at the National Weather Service looked at this year is the state of the El Niño Southern Oscillation (ENSO)—the aperiodic cycle that alternately brings warm and cool waters to the east coast of South America. Although the correlations are not strong, El Niños—warmer water in the eastern tropical Pacific—are **weakly correlated** with later and drier monsoons while La Niñas—cooler water in the eastern tropical Pacific—have a **stronger correlation** with wetter monsoons. El Niño conditions that prevailed last year are being replaced by ENSO neutral conditions that provide no clue about the coming monsoon.

Lest we put too much faith in the ENSO signal, we should remember, however, that last year’s El Niño was supposed to bring us a wetter winter and look what happened instead. Sometimes Mother Nature’s signals are deceiving.

Another monsoon signal looked at by the meteorologists this year was the state of winter snowfall in the Southern Rocky Mountains. Greater snowpack brings a larger volume of snow and higher surface albedo (reflectivity) that lower air temperatures and delay the spring thaw as reported in this **study**. The higher soil moisture produced when the snow melts reinforces this trend. Cooler spring temperatures delay the onset of intense heating that kick starts the monsoon engine and pulls the subtropical ridges northward into Arizona. The snowpack this year was normal, giving us no signal.

So there we are. All we can say about the 2016 monsoon is that it might be good or it might be poor. Your guess is as good as the National Weather Service.

Until next time, happy surfing!

Gary Gruenhagen, Master Gardener  
[virtualgardener@cox.net](mailto:virtualgardener@cox.net)



## June Reminders

- ◆ Check tree ties
- ◆ Remove stakes if tree can stand alone
- ◆ Mulch trees and shrubs
- ◆ Remove faded flowers & fertilize roses
- ◆ Stake tomato plants and watch for curly top—remove
- ◆ Prevent blossom end rot by even watering
- ◆ Water! Water! Water!

## Cuttings 'N' Clippings

✿ For more information on the Cochise County Master Gardeners, go to the web site at:

<http://cals.arizona.edu/cochise/mg/>  
or contact Valerie at:

[valeriedavidson@email.arizona.edu](mailto:valeriedavidson@email.arizona.edu)  
You can also follow them on Facebook at: [www.Facebook.com/CochiseCountyMasterGardeners](http://www.Facebook.com/CochiseCountyMasterGardeners)

✿ The Master Gardeners are at the Sierra Vista Farmers Market on the **first Thursday of each month** to answer questions and offer resources for common garden and landscape problems.

✿ **June 4, 9:00—10:30 AM** Water Wise will be presenting *Rainwater Harvesting—The Basics* at the C-A-L Ranch Supply, 673 N. Hwy 90. Join Sandra Hurlbut, UA Water Wise Program, and learn the basics of how to harvest rain at your home. Check out the Water Wise web site to see what else is happening in 2016 at:

<http://waterwise.arizona.edu/>

✿ The Cochise Chapter of the Arizona Native Plant Society’s next monthly program will be held in September. Field trips may be held this summer. For information follow them on their web site:

<http://www.aznps.com/chapters/cochise.php>

or Facebook:

<https://www.facebook.com/AZNPSCochise/>

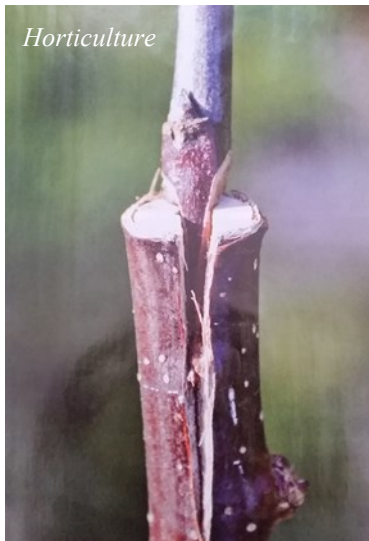


Cochise County Master  
Gardener Newsletter Editor  
Carolyn Gruenhagen

# Ready, Set . . . Grow!

Propagation in relation to horticulture is defined as “to cause to multiply by any process of natural reproduction from the parent stock.” When we think of propagation we may get a mental visual of trays of small cuttings on the benches in greenhouses and nurseries, or we have never seen it or tried it and it is something mysterious to even imagine.

Propagation is an integral part of basic, good gardening and horticulture practices. Propagation, you see, isn’t simply a means to reproduce a plant we love and wish to cultivate and share; it is also a means for rejuvenation or safeguarding plants from injury. There are very many ways to propagate plants and different plants have different techniques that are successful. Seeds are the most obvious form of propagation utilizing stratification or scarification. Other forms include green stem cuttings, hardwood cuttings, heel cuttings, mallet cuttings, leaf bud cuttings, simple layering, serpentine layering, tip layering, French layering, stooling, and grafting just to name a few.



Grafting is one of particular interest and useful in my occupation. In fact, I just finished a grafting demonstration for a farmer in April. The skill of grafting in order to propagate plants also has its different forms and techniques. These include cleft grafting (a.k.a. apical wedge graft), saddle grafting, veneer grafting (a.k.a. side grafting), inlay bark grafting, four-flap grafting, and bud grafting (t-budding and chip budding). There may be still other grafting techniques not mentioned here.

One reason why grafting has gained some popularity is because of planting space. Some of us would like to have that pear, apple, cherry, pecan, or citrus tree, but we simply do not have the space to plant all the trees necessary in order to get proper pollination and successful fruit set. Multi-grafted trees make it possible to grow many varieties of fruit in a small space. There are, of course, some things to consider and be aware of before attempting the grafting techniques.



First and foremost, keep in mind apple-to-apple, pear-to-pear, cherry-to-cherry, peach-to-peach, and citrus-to-citrus. Most grafts often do not

“take” (even when they are compatible) simply because of genetic differences. Other reasons why grafts may not “take” may be because of the season when grafting occurred, environmental conditions, poor skill, or disease. So, if you are going to attempt to learn grafting and have that single 5-varietal apple tree in the county, I suggest practicing the grafting technique on a lot of cuttings from winter pruning, checking resources that the graft is being done in the right season, and **most importantly, keep things clean.** Make sure the source for your graft wood is not coming from an already diseased tree and wear latex or nitrile gloves when performing the “operation” as oils from your hands can disrupt the process of “taking” (this term refers to when the tissues have inosculated). Also, the more fresh the scion wood the better.



It is also important to keep track of what you have grafted. Purchase some weatherproof tags that you can label and attach to the different scions to keep track of which branches are which. Ultimately, this will help you later with man-

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## A Book Review: *Field Guide to Cacti & Other Succulents of Arizona*

The back of the fly leaf for this book states simply: “Some of my best friends have spines.” This pregnant sentence is in black ink on a white page. After even a quick glance through this book it is apparent that it took a great deal of “spine” to compile this practical but thorough guide to cacti and succulents in Arizona.

This effort started generations ago. In 1960, John Haage, the Curator of Plants at the Arizona-Sonora Desert Museum put an ad in a Tucson newspaper inviting the public interested in cacti to come to a meeting in his home. There was standing room only for the first meeting of what became the Tucson Cactus Club. The organization has changed names over the years. It is now known as the Tucson Cactus and Succulent Society (TCSS) and is registered with the IRS as a 501(c)(3) tax-exempt organization dedicated to education, information, conservation, and discoveries about cactus and succulents. The TCSS will probably reach 1,150 members this year, according to its current President, Dr. Richard “Dick” Wieshopt. He told me that the TCSS is the largest cactus and succulent society associated with a municipality.

One of the TCSS’s many laudable efforts involves rescuing plants that would otherwise be destroyed by development. They often get little notice that plants need rescuing. To better identify and understand the many cacti and succulents that they encounter, members of the TCSS began documenting the plants they observed. They found it would be helpful to put together an “organized, up-to-date and easy to use reference tool.” The authors, Peter Breslin,

Rob Romero, Greg Starr, and Vonn Watkins adhered to the most widely accepted taxonomy in selecting the species to include in the book. They traveled thousands of miles on Arizona’s highways, dirt roads, trails, and cliffs to locate, verify, and record the plants in the book. Their work is so complete that there are photographs taken *in situ* of each of the species in the book.

This little volume begins with a history of the TCSS and an introduction by University of Arizona’s most famous ethnobotanist, Dr. David Yetman. Then TCSS member, John Durham, explains how the authors consulted reference books and were guided by the work of others. Next, the book includes very useful life size drawings of the various parts of plants and structures that make up the “morphology” of species in the book.

This field guide also gives “genus accounts.” It explains the various genera of cacti and succulents found in our state. Following that, there are the far more detailed “species accounts.” As some readers may already know, my favorite native plants are the agaves. Thanks to this field guide, I have a great deal more detail about how to observe these wonderful plants in other parts of the state. The book gives us the etymology—the derivation of the Latin name—for the 16 species of agaves listed in the book. It gives readers a description of the size of the plant and the leaves. It tells us what the flowering structures and seeds are like. It also gives the geographic distribution and habitat where the plants are likely to be found. And, it contains notes including information that couldn’t be wedged into the standard format for each species.

What makes this book especially

useful is that it is full of maps that show the parts of the state where species are likely to be found. There is a great photo of each plant *in situ*, a close up of the leaves and a close up of the flowering structures. The book is small—only 9 by 6 inches. It’s intended to be carried through the low desert and mountain passes, up washes, down cliffs, and to be stuffed in fanny packs and saddlebags. It’s sturdy, but I wouldn’t drop it in a lake. It’s going with me on all my hikes around Arizona, on visits to our many botanical gardens, and where ever I can get into landscapes and wild spaces where cactus and succulents grow.

We owe the TCSS a debt of gratitude for this wonderful field guide. Where can you get yours and maybe offer a tax deductible donation to further the efforts of the TCSS? If you go to this website, you can order the book online:

<http://www.tucsoncactus.org/html/fieldguide.html>

If you don’t use the internet, you can write to: Tucson Cactus and Succulent Society, P.O. Box 64759, Tucson AZ 85728-4759. And some gracious soul has put a telephone number on the webpage as yet another contact. Please only call during business hours: (520) 256-2447. But get your own copy.

*Terrie Gent, Master Gardener*

**(Editor’s Note:** One copy is available in the Cochise County Library system.)



## At a Glance Box

### It's a Bloomin' Cochise County Native Plant of the Month

**Plant:** Kidneywood, Mexican kidneywood, *Eysenhardtia polystachya*

**Description:** Flowering deciduous woody shrub, small tree

**Blooms:** Multiple small white flowers on a stalk. Late spring, summer

**Water Need:** Low to no supplemental

**Use:** Landscape plant

**Culture:** Shallow soils, rocky slopes, canyon shade, grasslands, 3,000 – 5,500' elevation

**Learn more:** Cochise County Herbarium, [www.cochisecountyherbarium.org](http://www.cochisecountyherbarium.org)

For an in-depth article, see below.

*Cado Daily, Guest Author*

*Water Resources Coordinator, Water Wise Program – Retired!*

*University of Arizona Cochise County Cooperative Extension*

## Kidneywood

Unwittingly, you can cause an explosion. A butterfly explosion. When in full bloom (May through August) the *Eysenhardtia polystachya* (eye-sen-HEART-ia poly-STAKE- ee-ah) commonly called “kidneywood” or “Mexican kidneywood,” can explode with lovely Marine Blue iridescent butterflies when a passerby brushes the woody shrub—a bit reminiscent of the butterflies in Gabriel Garcia Marquez’s novel, *One Hundred Years of Solitude!*

The handsome kidneywood plant is common in our rocky canyons. Growing freely in the Mule Mountain canyons, I was surprised to see plants sprouting on top of the ancient limestone reef on Hwy 80 going to Douglas. Not only was the kidneywood growing out of solid limestone, but on the south side of the reef! That is some tough plant.

When identifying *E. polystachya*, a cursory glance may fool you into thinking it is a mesquite (yes, another one of those mesquite look-a-likes!).

Like a mesquite, the *E. polystachya* belongs to the legume family, *Fabaceae*, and has pinnately compound leaves with small leaflets. But take a closer look—no thorns. Nice! *E. polystachya* is also smaller than a mesquite and has a slender trunk. The flower though, gives it away.

Like a mesquite flower stalk, the 2 to 3-inch flower stalk of the *E. polystachya* is comprised of approximately 50 to over 100 tiny flowers, but unlike the mesquite the kidneywood flower stalk grows upright and the flowers are white. Mesquite flower stalks droop downward and the flowers are yellow. Unlike the mesquite, it seems like every kid-



neywood flower produces a seed resulting in clusters of mahogany-colored 1/2-inch long seeds that persist on the plant (another good identifier).

I just collected a flower stalk and honey bees were busy gathering nectar and pollen from the sweet-smelling flowers. I have a cluster of kidneywood shrubs near my house growing out of an outcropping of fractured Pinal Schist rocks. I love walking by the shrubs, smelling the sweet flowers and watching the party of pollinators visiting the plant. But I try not to crush the leaves. Although smell is a great plant identifier, pungent is a civilized word for the smell of crushed kidneywood leaves.

Besides being a valuable plant for pollinators and a good landscape plant, the *E. polystachya* is known by scientists and herbalists for its medicinal qualities. The bark is used to treat a wide range of urinary disorders (perhaps giving kidneywood its common name?). It is also studied for its larvacidal potential to control cattle ticks. For kicks, try soaking some wood in water—it is fluorescent!

Mexican travelers can easily find *E. polystachya* as it is abundant in the Mexican states of Hidalgo, Puebla, Sonora, Jalisco, Oaxaca, Nuevo Leon, and Durango. Southeast Arizona is at the northern tip of kidneywood’s range.

To use kidneywood in a landscape, keep in mind that it is de-

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ciduous (drops its leaves in the winter) so tuck it in with other plants. Try using it as a backdrop for small, evergreen, low-water shrubs like *Salvia greggii*, *Damianita*, or Trailing indigo bush. For purchasing, ask at native plant and local nurseries, and growers at Farmer's Markets. Two similar species, *E. orthocarpa* and *E. texana* would be fine to plant here, too.

In a landscape or in the wild, the *E. polystachya* is a wonderful plant to have as one of our Cochise County natives!

*Cado Daily, Guest Author*



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agement decisions in case you graft a more vigorous grower and need to be less conservative with pruning choices in late winter. I heard of one grower who put different colored lights on the branches to signify the different varieties. He didn't like the cluttered look of tags.

Below is a list of necessary supplies for grafting just to get started, no need to buy those expensive grafting gadgets they just take away from learning a valuable skill.

- Grafting knife (very sharp)
- Sharpening stone
- Hand pruners (very sharp)
- Sharpening file
- Grafting wax
- Grafting tape
- Tree Tanglefoot (don't get it on you—another reason to wear gloves)

There are many sources available through your Cooperative Extension that explain grafting in more detail or demonstrate some of these grafting techniques. It would be best to start with learning one of the graft techniques, like cleft or inlay bark, then once you are successful maybe learn a different one the following year. Also, during certain times of the year there may be a qualified horticulturist demonstrating or giving a grafting workshop (hint, hint), so be on the lookout for those. Before you know it you'll be picking 'Fuji', 'Red Delicious', and 'Gala' from the same apple tree!

Happy Gardening Friends.

*Joshua Sherman, M.S.,  
Commercial Horticulture Area  
Agent*

## Did You Know . . .

. . . you can get an electronic notification when a new Cochise County Master Gardener Newsletter is posted on-line? Send an email to Valerie at:

[valeriedvidson@email.arizona.edu](mailto:valeriedvidson@email.arizona.edu)  
or give her a call at: (520) 458-8278  
Ext 2141 with your request.

. . . that every six minutes an underground utility line is damaged because someone decided to dig without call **811** first? Don't become part of the statistic—make sure to call **811** before you dig! It's easy and it's free! (SW Gas)

. . . evacuations are more common than many people realize. When evacuations are necessary, local officials provide information to the public through the media, by use of sirens or telephone calls. Never ignore an evacuation warning. Timely evacuation is critical to the safety of your family. ([www.ready.army.mil](http://www.ready.army.mil))