

# *Yavapai Gardens*

Master Gardener Newsletter

March 2008

## Seed Starting

by **Nora Graf**

from **January 1998 Yavapai Gardens**



This is a great time of year for gardening. Yes, I realize that it is a bit cold outside and not really conducive to gardening. But this is the time of year to be making up those catalog orders, planning the garden and soon—starting seeds inside. I'll bet you are already planning to fill the window sills with egg cartons, paper cups or peat pots with the beginnings of the spring garden.

But have you ever had a problem getting some seeds to germinate? Maybe they did nothing at all or just a few sad little leaves poked their heads through the soil. It may be that you didn't give the seeds what they needed to break their dormancy. Some seeds need a little more than moisture and warm temperatures to germinate.

Researchers are still exploring what plants need to germinate. In some cases, it may be to propagate rare species; in others, it is a way of making the plant available to the general public. The orchid is one of the most well-known examples of expanding the market of a rare plant. Europeans first started collecting orchids seriously in the late 1700's. But it wasn't until 1900 that Noel Bernard figured out that the seeds needed the presence of a specific fungus to germinate. Then it wasn't until 1922 that Dr. Lewis Kundson of Cornell University figured out a standardized method of germination that revolutionized orchid-growing. While most seeds aren't as complex to germinate as orchids, researchers are still working out the germination requirements for many plants.

Some principles of Seed Germination:

1. Every species of plant has one or more mechanisms for delaying germination until the seed is dispersed. This prevents the seed from germinating in an inappropriate environment. Surprisingly, approximately 95% of seeds need a chemical trigger versus a physical

## Events & Activities

MG Association Meeting, Wednesday, Mar. 19 6:30pm, See address page for map. Speaker: Jason Lavelle from Arizona Botanical Garden

Yavapai Rose Society - , 7:00 PM at the Prescott. For more information call Bob or Nancy at 771-9300,

Alta Vista Gardening Club, Prescott, fourth Tuesday of the month, 12:30pm. Call 928-443-0464 for location and information.

Prescott Area Gourd Society, third Tuesday of the month, 6:30 pm, at the Smoki Museum.

Pond Club -this is an informal group that meets every couple of months, usually the 3rd week. Email [aquaticgardens@esedona.net](mailto:aquaticgardens@esedona.net) for more information.

Prescott Orchid Society, meets 3rd Sunday of the month, 2pm at the Prescott Library, call Cynthia for information. (928) 717-0623

Prescott Area Iris Society call 928-445-8132 for date and place information.

Verde Valley Iris Society, March 26, 6pm, Public Safety Building, 6th & Aspen, Cottonwood. Call 567-7470

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mechanism to start germination.

2. Most species need temperatures between 40°F and 70°F to germinate. A few species germinate between 90°F and 100°F.

3. Members of the same family, same genus, even closely related species may have different mechanisms for delayed germination.

4. Fifty percent of temperate zone plants use a delay mechanism that is destroyed by drying. This means that seeds need to dry before they are able to germinate. During the drying process chemical changes take place.

5. Most species have at least two delay mechanisms, one being a chemical time clock.

6. It is common for the delay mechanism to be destroyed at one temperature, followed by germination at another temperature. A seed may need to go from 40°F to 70°F before it can germinate or it could be the reverse, also.

7. Some species have several delay mechanisms that must be destroyed under different conditions of temperature and time in sequence. A specific sequence of events must take place before the seeds germinate.

8. Some species germinate under conditions of oscillating temperature.

9. Light is an important variable and is a requirement for germination in some species. Some species need darkness for germination.

10. Seeds in fruits may have chemical inhibitors in the flesh of the fruit that block germination. The seeds need



to be removed from the fruit before germination can take place.

(From "Seed Germination Theory & Practice," by Norman C. Deno.)

Two words come up frequently when talking about seed germination.

Stratify—this refers to temperature. Some species like echinacea and maples need a period of cold for several weeks before they can be sown. Without it the seeds will not germinate. You are essentially mimicking

the conditions in the plant's native environment.

Scarify—many seeds have a tough, hard coat that needs to be broken or scared by some method before germination happens. Examples are some of the desert plants including Texas Mountain Laurel, coral bean, lupine and some cactuses. One of the reasons you see a lot of plants along the banks of washes is not just because of water. Seeds tumbled through a flash flood are naturally scarified, increasing germination wherever they are deposited in the end. Physical scarification can be done by taking a sharp!! knife and making a nick in the seed coat or sand-

paper the surface. One chemical means is to soak in sulfuric acid. (Not a technique for the home gardener.) And you thought you could just throw the seeds in the ground.

There are some books out there on seed germination if you want to explore the topic:

From Seed to Bloom by Eileen Powell

The Reference Manual of Woody Plant Propagation by Dr. Michael A. Dirr & Charles W. Heuser, Jr.

Seed Germination Theory and Practice by Norman C. Deno

Arizona Highways—Desert Wildflowers, written by the staff of the Desert Botanical Gardens



## Damping Off

by Nora Graf

from January 1998 Yavapai Gardens

With the seed-starting season happening now, it's a good time to remind you about damping off. Damping off causes young indoor seedlings to rot at the soil line or the seeds rot before germination. It is caused by a soil-borne fungus that prefers weak and overcrowded seedlings.

### Some tips to prevent it.

1. Always use a sterile potting mix, preferably one designed for seed starting. Compost has been found to be excellent in preventing damping off.

2. Sterilize containers before adding soil mix. A solution of 1 part bleach to 9 parts water is an excellent disinfectant. Thoroughly wash any containers in this solution.

3. Leave 1/2 inch or less between the soil and the top of the flat to encourage air circulation.

4. Keep soil moist but not soggy.

5. Good air circulation is a must. Thin seedlings to improve air movement around them. A small fan, will move the air around the seedlings. (Air movement also encourages seedlings to develop stronger stems.)

6. Make sure the soil is not too cool for the variety of seed you are planting. Cool temperatures inhibit germination and can produce weak seedlings, creating a good environment for the fungus to attack either seeds or plants.

7. A last resort, a fungicide can be applied after the seed is planted.

### How to Sterilize Soil

If you are a bit frugal and don't want to throw out potting mix that has been used before, you can sterilize it in your home. Sift the soil to remove large pieces, stones, etc. Dampen the soil, but don't overdo it. Do not waterlog the soil. Place a three to four inch layer of soil into a metal baking pan and place in your oven. Heat the soil in the oven. Use a meat thermometer to track the temperature. Heat soil until it reaches a temperature of 180°F. Turn off oven; cool completely. After it cools you can add amendments. You want the soil to be light and able to hold water. Vermiculite, peat moss and perlite are good additions.

## Grow Some Knowledge

by Bobbie Jo Gooslin

At the January meeting of the Master Gardeners Association in Cottonwood, I gave the following presentation in answer to a "Grow Some Knowledge" question about cold frames.

Cold frames are a transparent enclosure, built low to the ground and used to protect plants from cold weather. Extra insulation such as blankets, newspaper, or even snow may be necessary in cold weather. The transparent top allows sunlight to enter the box and give a greenhouse effect by trapping the radiant heat. There are several uses for cold frames including starting seedlings in early spring, hardening seedlings before planting them in the ground and protecting potted outdoor plants in cold weather.



Cold frames can be constructed from wood, blocks or even hay bales. The outer dimensions should be

convenient for easy access, such as 3 by 6 feet. The top should face the south and be raised 4 to 6 inches higher in the back than the front for better reception of the low southern winter sun. The top can be constructed of glass, transparent plastic or any clear rigid sheeting. During snowy weather the top should be kept free of excess snow to prevent breakage from the weight of the snow. The floor may be absent and the box placed on a layer of gravel for good drainage.

In warmer weather the internal temperature should be kept below 45 degrees and the top should be opened during the day to allow exchange of air. Careful watering is important, particularly in a dry climate.

The cold frame concept can be extended to covering of bushes and sensitive perennial flower beds by using transparent plastic sheeting held down by rocks at the borders. Stakes in the center of a garden can be used to support the sheeting to prevent the crushing of plants by rain or snow. Cold frames can be a blessing to gardeners who experience a brown, cold winter and want some color in their garden.

# Master Gardeners Go Nuts in Camp Verde

by Lynn Hazlewood and Pam Bowman

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The Pecan, Wine and Antique festival, which occurs the second week in February, is a popular event in Camp Verde. Although pecans are not native to the Verde Valley, they have found a hospitable second home in the area for more than a century. Camp Verde has nearly 200 acres of pecans in commercial production, yielding 200,000 pounds of pecans each year. Pecan trees, with their excellent shade canopy, can also be seen in many local backyards. Their delicious nuts are harvested from June through March.

Every year at the festival, pecans are offered in every shape, form and style from plain pecans, to pecan pies, pecan candy and spiced pecans. You name it, they'll have it. There are old fashion hayrides to a working pecan farm, wine tasting is offered by several Arizona wineries and antique dealers offer items from small to large. The wineries are mixed in among the antiques, so it's possible to visit the booths while tasting wine. For added interest, there are demonstrations such as spinning, glassblowing and blacksmithing. Visitors can also listen to live music and snack on lots of delicious food. It's an all-around fun event to work and visit.



Again this year, Yavapai County Master Gardeners were on hand to help with the event. They participated in the judging and staffed a general information table in the vendor area.

On Friday, Michael Kilby, a retired University of Arizona fruit and nut specialist, and Yavapai County Agent Jeff Schalau led the judging of pecan samples at the show. The following Master Gardeners actively participated in the judging process: Jack Burton, Jeanne d'Heilly, Beverly Emerson, Lisa Gerber,

Nora Graf, Christine Graff, Jean Norris, Suzette Russi, Terry Stewart, Jeannette Teets, Joan Tyler and Normlinda Zuniga.

On Saturday and Sunday, additional Master Gardeners staffed an information table where they answered a wide variety of questions about—but not limited to—pecans. Thanks to those who helped: P.J. Ames, Evelyn Becker, Pam Bowman, Bob Burke, Jack Burton, Jay Fleishman, Bobbie Jo Gooslin, Lynn Hazlewood, Jean O'Laughlin, Herdis MacLellan, Scotty Miller, Jackie Rizzo, Lois Slabe, Mary Smith, and Anna Wilson.

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## New Master Gardeners

By completing 50 volunteer hours, the following Associate Master Gardeners received certificates and nametags (signifying certification) at the February Master Gardener Meeting:

Lois Slabe  
Deborah Wilson

***Congratulations!***



**Pictures Needed:** Richard Wise is giving a talk at Mortimer nursery on March 29th. If you have pictures of your perennial gardens, Richard would like to include them. Send digital pictures to Laura Atwood (latwood@mortimer-nursery.com).

**Mentors Needed:** for the 2008 Master Gardener class. We need mentors for these Associate Master Gardeners. You will be given mentor training and will then be assigned one or multiple mentees. Contact Cynthia Cartier-Roberts: bloominstamper@cableone.net, 445-4861

# Meet a Master Gardener: Bob Burke

by Jay S. Fleishman

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“...parsley, sage, rosemary, and thyme.” (Simon and Garfunkel)

It is certainly very unusual in our times to discover a musician with an interest in gardening, a landscaper who is a student of the science of wine, a salesman with skills in computer science, model trains, and outdoor plumbing.

Robert Burke, the incoming treasurer of the Master Gardener Association, has experienced a rich life involving all of the above areas of expertise.

Born in Michigan, Burke and his wife Joette moved to their new house in Phoenix in the 1970's and landscaped the entire property, including several trees (queen palm, fan palm and apricot) and shrubs. He also did the hardscape with concrete and installed a sprinkler system. The Burkes then moved to another house in the Moon Valley area where all of the landscaping work was repeated. In the 1980's, Burke stopped teaching music, directing the band and playing

trombone professionally and moved to Waco, Texas, where he managed a successful sales franchise.

Four years later, the Burkes relocated to Plano, Texas, north of Dallas where Burke ran a business which supplied the raw materials used by box cutter manufacturing companies. In each Texas location, the Burkes moved to new houses on previously undeveloped land which required extensive landscaping. The house in Plano had a large yard requiring abundant grass and a row of 10 sweet gum trees. The vegetation flourished in the humid heat of central Texas. After 12 years in Plano, the Burkes returned to Arizona and settled in the Verde Valley where they built a home at their present location on an acre of raw land in Rimrock. Their house faces south

and is set back from the street, leaving a spacious front yard with an orchard containing 18 fruit trees as well as a palo verde tree and a desert willow. Along the front porch are shrubs and perennial flowers.

Beyond the deck on the north side of the house and adjacent to the patio are two berms with a variety of bushes,

perennial flowers, shrubs and herbs. Included are artemesia, Russian sage, euphorbia, potentillas, tarragon, basil, dill, “parsley, sage, rosemary and thyme”. Several roses are located near the house. The vegetable garden in the northwest corner includes tomatoes, peppers, cucumbers, carrots, onions and garlic. An artificial dry creek bed crosses the back of the property from east to west with a southward downhill channel along the east side of the house. The entire property is supplied by a drip system extending from the well on the east side of the house. Tools and equipment are housed in a shop where Bob also works on the model trains.

Over the years, Burke has become a wine connoisseur and enjoys studying the progress of the Arizona wine industry. His reading is centered on a variety of

non-fiction topics, including history.

Burke completed the Master Gardener course in 2003 and answered the phone in the extension office for 2 years in order to gain further knowledge and enhance his gardening skills. He also participated at the Pecan and Wine Festival in Camp Verde for three years. He recently presented a “Grow Your Knowledge” program for the Master Gardener Association on the construction and maintenance of drip systems. Robert Burke has become a major asset to the Master Gardener Association, sharing his extensive experience and knowledge with the community while continuing to learn from educational programs.



# ANOTHER BLOOMING QUIZ !

from: **Uncle John's Bathroom Readers**

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This is a really tough quiz, so good luck. The answers are on the next page.

Travel around the world to share a rosy view of history!



1. A rose fossil that is over 35 million years old was discovered. That makes the rose at least 25 million years older than the first human. This fossil was discovered in what state:

- a) Florida
- b) Colorado
- c) Hawaii

2. Five thousand years ago, people in this philosopher's homeland were among the first to grow roses in their gardens. He is said to have had 600 books on how to grow roses. He was:

- a) Greek philosopher Plato
- b) Roman philosopher Cicero
- c) Chinese philosopher Confucius



3. In this ancient country, roses have been found buried in tombs with the dead:

- a) Egypt
- b) Persia
- c) Cyprus

4. A rose bush said to be 1,000 years old can be found at the Hildsheim Cathedral in this country:

- a) Italy
- b) Poland
- c) Germany

5. Rose wine, made from petals, is one of the oldest wines around, dating back to this ancient, spirited people:

- a) the French
- b) the Maya
- c) the Persians

6. Roses flooded this civilization like spam in your inbox. People used rose petals as carpeting, to make oil and to perfume their bathwater, as snacks, and to throw like confetti at parties and festivals. These people were:

- a) Aztecs
- b) Vikings
- c) Romans

7. In the early Middle Ages, healers valued a type of rose that they called the Apothecary Rose for its medicinal properties. They also used rose hips and petals to cure sore throats and skin rashes. The Apothecary Rose is believed to date all the way back to these great gardeners:

- a) Aztecs
- b) Persians
- c) Egyptians

8. Roses were a symbol of fertility to these ancient people. Their famous goddess gave the flower its name and their poetess, Sappho, called the rose "the Queen of Flowers". These folks and their goddess were the:

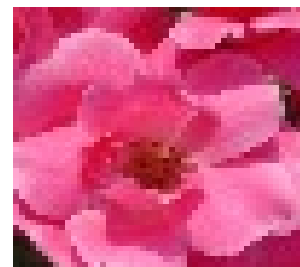
- a) Egyptians and their goddess Isis
- b) Greeks and their goddess Aphrodite
- c) Romans and their goddess Juno

9. This romantic nation was also no slouch when it came to roses. This empress had a collection that included more than 250 varieties. She was:

- a) France's empress Josephine
- b) Austria's empress Maria Theresa
- c) Russia's empress Maria-Feodorovna

10. In this rose-loving nation, two different factions – the House of York and the House of Lancaster- vied for control of the country in the War of the Roses. Adapting the rose as their symbol, York selected the white rose and Lancaster the red rose. Lancaster won the day. This nation was:

- a) France
- b) England
- c) Italy



## PROGRAM SCHEDULE FOR 2008

March 19, Cottonwood—Jason LaVelle—“Succulents and Cacti”

March 29, “Master Gardener Real Gardens for Real People Tour”, 9 am-4 pm, north Phoenix area, call 602-470-8086, seven gardens that have been taken from desert to “restful haven”.

April 5, Sedona, KSB (Keep Sedona Beautiful), 8:45 am-3 pm, Cost-\$15-\$20

April 6, “A Grand Tour of Gardens” put on by Phoenix Home and Garden magazine, 10 am-4 pm, \$40, call 800-228-6540, ext. 132, part of proceeds goes to the Desert Botanical Garden.

April 16, Prescott—John Paustian—“Roses”

April 19, FIELD TRIP—Diane Scantlebury’s Tickaboo Ranch, Hydroponic Greenhouse and farm, Camp Verde, 10:00 a.m., sign up by calling Missy Sandeen by April 15th (928-771-9856), limit of about 20-25. We will need to carpool.

April 26, 9:00am-2:00 pm, Highland Center Plant Sale and Educational Festival

May 21, Cottonwood—Social/Information Meeting with 2008 Master Gardener Class

**Date Change: The annual picnic has been rescheduled to Oct 26.**

### **Volunteers Needed**

We need chairs for the Prescott and Camp Verde Farmers Markets. Please contact Mary Barnes, [mcbarne1@cablone.net](mailto:mcbarne1@cablone.net), 583-0889.

### **Arizona Highlands Garden Conference Sponsors Needed**

We are in big need of sponsors for our conference this year. Think about businesses you know of or that you frequent that might want to make a contribution to our conference (includes advertising to conference attendees). Tom Watson is keeping track of the businesses that MGs are contacting so we don’t make duplicate requests. He will ask for that info when he gives you the packages.

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**Answers: 1 (b); 2 (c); 3 (a); 4 (a); 5 (c); 6 (c); 7 (b); 8 (a); 9 (a); 10 (b)**

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**FROM THE EDITOR:** Please send or email articles and announcements to the address below. All articles must be in my hands by the 10th of the month. Short announcements (no more than 2 or 3 lines) will be accepted until the 25th.

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## MG NEWSLETTER



Cottonwood Cty Board of  
Supervisors Boardroom  
10 S. 6th St.

**Next Meeting: March 19, Cottonwood,**  
Jason Lavelle, nursery manager for the Arizona Botanical  
Gardens of Clarkdale, AZ will be the speaker.

Jason came to Flagstaff, Arizona in 1997 and was employed by the Flagstaff Native Plant & Seed Co. In 1998 Jason's wife was transferred to Cottonwood and they relocated in Cottonwood and he began his association with the Arizona Botanical Gardens.

The Arizona Botanical Gardens specializes in Cacti & Succulents, they are primarily a xeriscape nursery and they are also licensed landscapers.

Jason will be talking to us primarily about the cacti and succulents, focusing on what to look for when you are purchasing your plants, what types of pests to be on the look out for, preventing frost damage, an issue this winter, how to water and care for your plants, the general care and maintenance.

He will also be bringing specimen plants and a hand out on cactus care.