

Seeds For Thought

Solano County Master Gardeners

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THE SIMPLEST TERRESTRIAL VASCULAR PLANT ON EARTH: WHISK FERN

Patricia Matteson, U.C. Master Gardener, Solano County

Psilotum nudum (L.) P.Beauv. is a relative of ferns, early vascular plants that date back at least 380 million years, before flowers evolved. It belongs to order Psilotales, which contains the simplest of all terrestrial vascular plants, and whisk fern family Psilotaceae, all members of which lack true roots and leaves. Because they are so simple, whisk ferns were once thought to be surviving descendants of primitive, now-extinct vascular plants. Recent studies, however, have found them to be related to modern ferns, simply having reduced features.



Psilotum nudum, whisk fern
Photo Credit: Patricia Matteson, UC Master Gardener; Used With Permission

P. nudum is the best known of 12 whisk fern species found in tropical and warm temperate regions nearly worldwide. It grows upright from the ground or in pots, reaching up to 18 inches tall and wide. In tropical areas it is often an epiphyte, dangling from branches of trees. In more temperate zones, it may emerge from rock crevices. Its stems range in color from bright green in moist, shady conditions to yellow or yellowish-orange in drier, sunny spots.

The plant that we see consists entirely of narrow stems, dichotomously branched and triangular in cross section. They have tiny leaflike outgrowths, but unlike true leaves the outgrowths have no vascular tissue. The photosynthetic stems function like leaves, being covered with stomata and having a central core of vascular tissue that moves water and nutrients throughout the plant.

Like ferns and other fern relatives, *P. nudum* reproduces via spores rather than seeds. Yellow spore cases produced on the upper stems shed yellow to whitish spores. The spores germinate underground to form tiny branched rhizomes (horizontally creeping stems) usually less than 2 mm long. The

rhizomes are dichotomously branched, have vascular tissue, and are saprophytes, absorbing nutrients dissolved in the environment and depending on symbiotic mycorrhizal fungi to process them. They also possess both male and female reproductive organs. A fertilized egg cell produces the perennial evergreen plant we see above the soil, which retains a rhizome rather than having true roots. Rootlike hairs on the rhizome continue to be associated with mycorrhizal symbionts.

People have appreciated this handsome, unique plant for millennia. Its common name, “whisk fern,” refers to tying a bunch of its branches together to make a small broom. *P. nudum* grows wild in southern Japan, where this “pine needle orchid” was considered noble during the Edo period (1603-1867). The Japanese developed more than 100 ornamental cultivars and gave them fanciful names. On the other side of the Pacific Ocean, whisk fern is a traditional part of Hawaiian leis. Whisk fern has also been used medicinally, to treat respiratory infections and diarrhea, and as a laxative. It appears to be a promising source of antimicrobial chemicals.



Sporulating *P. nudum* in the Foster Botanical Garden, Honolulu
Photo Credit: Michael Zeiss; Used With Permission

Here and now, *P. nudum* is available in the nursery trade—indeed, it sometimes becomes a greenhouse weed. It is versatile, preferring high humidity and part shade, but can grow in full sun or shade. The soil can be acid or neutral, as long as it is moist and well-drained. Whisk ferns are rarely damaged by diseases or pests, and hold up well in the face of three major Solano County challenges: they tolerate heat and wind, and are deer-resistant. These curious plants make attractive conversation pieces in the garden. Consider bedding them among taller plants that can moisten the air around them and buffer them from our drying summer sun. ✕

*See Page 2 for References

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GARDENING FOR CLIMATE CHANGE

Mike Gunther, U.C. Master Gardener, Solano County

Gardeners of the not so distant past have faced problems related to soil, sunshine, moisture and disease, to name a few. Today gardening has taken on a whole new dimension due to climate change. So how do we gardeners adapt and cope with the aforementioned basics (sun, water, soil and pests) in light of our ever changing climate?

This article will not answer all questions regarding gardening for climate change. It will provide some thought provoking information as to what climate changes gardening is seeing today. It will also give ideas for adapting and/or modifying how we garden.

Probably the most notable climate change is that of temperature. The world has experienced record breaking high temperatures in the past few years. Statistics show that since the early 1900's to the present, the earth has warmed nearly 2 degrees Fahrenheit. How we garden for this heat change is to garden wisely so as to not add to the greenhouse effect. This greenhouse effect is where heat is trapped on the earth's surface from, as an example, burning fossil fuels, which put carbon into the atmosphere blocking the earth's heat from escaping.

Planting perennials and native plants, trees, and heat tolerant vegetable crops all help to reduce this effect by removing carbon dioxide from the air and replacing it with oxygen through photosynthesis (our real source of oxygen). Sustaining life in our world without plants would be difficult if not close to impossible.

Another addition to the greenhouse effect is the use of gas powered gardening equipment and tools, which put exhaust gasses into the air. These can be easily replaced with battery operated tools and equipment.

On the plus side, soil can be a carbon sink (the ability of



Photo Credit: All Photos in This Article by Melinda Nestlerode, UC Master Gardener. Used With Permission

environmental features such as oceans, soil, and forests, to absorb carbon dioxide from the atmosphere) when conditioned with things like compost and other organic materials. Not frequently disturbing the soil lets it do its work to provide water, nutrients and anchor plants. Reducing food waste by composting also helps to reduce gasses from landfills that contain such waste.

Turning to another aspect of climate change is drought, and how best to garden during a drought. California has experienced periods of drought as far back as the 1840's. Climate change just makes this condition worse. Planting short season vegetables and drought tolerant plants helps during periods of drought. Putting down 3 to 4 inches of mulch holds moisture in, keeps plants cool and keeps control of weeds. Collecting water in rain barrels and sustainable landscaping where grass can be removed are other areas to help cope with drought.

As a side note our oceans are huge carbon sinks.....look how we take care of our oceans.

One more aspect of climate change is the effect it has on pests and pathogens or diseases. Pests and pathogens for sure shorten plant growth and life. As temperatures climb and less precipitation exists, plants become weaker and more susceptible to pests and pathogens. Trees are especially vulnerable in forests. Insect pests above and below the ground, depending on the climate location, will spread in numbers and movement. Some insects, for example mosquitos, may move from cold to warmer locations. One of the major pathogens, soil and air borne fungus' will also increase. Adaptation of pathogens to climate change may cause management of both insects and pathogens to be more difficult.

This article has barely scratched the surface of gardening for climate change in consideration of sun, water, soil and pests/pathogens. Hopefully, it provided you with information on things to think about when gardening. Help is always available through the University of California Master Gardener program of Solano county, 501 Texas in Fairfield. ☺



*REFERENCES FROM PAGE 1: THE SIMPLEST TERRESTRIAL VASCULAR PLANT ON EARTH: WHISK FERN

- <https://www.epicgardening.com/sow-seeds-in-september>
- https://sonomamg.ucanr.edu/Food_Gardening/Food_Gardening_Articles/
- <https://sustainable-solano.org/what-to-plant-and-when/>
- <https://ucanr.edu/sites/gardenweb/vegetables/>

MORE MESS, LESS STRESS...AND THE GARDEN IS HAPPY TOO

Lisa Ricco, U.C. Master Gardener Trainee, Solano County



Artichoke growing large in foreground while the calendula, borage and cosmos are still in bloom
Photo Credit: All Photos in This Article by Lisa Rico, UC Master Gardener Trainee; Used With Permission

It's always been my nature to want things clean and tidy. Inside and out. But I'm learning that a clean and tidy garden is not always what's best for the garden. Thanks to my daughter Jen, an avid gardener who has opened up my eyes to this thought process. Not that I didn't believe her when she explained the science and philosophy behind this concept, but I did want to do some research on my own. Here are a few of the things I discovered.

"I love a messy garden!" exclaims Julies Boudreau, author of

[Laidbackgardener.blog](https://laidbackgardener.blog). Boudreau shares that her goal, like my daughter's, has been to create an ecological garden. No pesticides, no synthetic fertilizers, only plants well adapted to their growing environment. That sounds good to me.

Fall is definitely the time of year I'm most tempted to go outside and tidy up. The winds have blown so many leaves into my creeping thyme (*Thymus serpyllum*) and my alyssum (*Lobularia maritimum*) is nearly bare, and the salvias look spent. Plant debris is everywhere, and everything needs clipping and trimming. Or so I thought.

This year, I'm trying a new approach. I'm allowing some of the plant material to "hang-out" during the winter months thereby providing ideal locations for certain insects to also "hang out." This will hopefully result in beneficial insects being ever present when the temperatures rise. We all know that those tender new shoots and buds that first appear on plants in the early spring are the piece-de-resistance for many of the insects we really don't want in abundance.

Not being so quick to tidy up also gives more time for many of the annuals to reseed themselves. That fact clearly makes sense. If I remove the spent blooms before the seeds drop, they can't reseed naturally. Duh!

Having an ecological garden has definitely been a top priority for some time. But, it's a process both in thought and action. One step in the right direction is resisting the urge to rid my garden of every aphid and budworm. If I want parasitic wasps and spiders and birds, and I certainly do, I need to create a more welcoming environment for them. A place for them to reside safely with the food sources they need. A few steps I've taken

include adding water sources and leaving behind some decaying plant material. I've learned that overwintering yarrow (*Achillea*) and broccoli, among others, are ideal places for garden friendlies to also overwinter. As well, in late winter/early spring, cleaning up too early can disturb the hibernating insects the messy garden has attracted, such as mason bees. By waiting until the temperatures are a consistent 55° I can reduce that risk allowing them to emerge and begin foraging.

London author and garden nerd, Dan Masoliver, writes a newsletter I really enjoy, [The Earthworm](https://theearthworm.com). In the June 21, 2022, issue he discussed this topic. He clarifies, "A messy gardener is not to be confused with a lazy or neglectful gardener." He explains the benefits of messy gardening provides a paradise for all sorts of wildlife. Long grass, fallen leaves and decaying plant material provide food, refuge and habitat for numerous bugs, bees, birds and spiders. Whereas, a neat and tidy garden that is without dandelions (*Taraxacum*) and nettles (*Urtica*) or wood sorrels (*Oxalis*) is often also devoid of the beneficial bugs and pollinators we want and need.



Salvia looking sad, but the hummingbirds still love it

A bit more mess can also mean a little less stress. And that's a good thing for the gardener too. So, this year I'm going to try to relax, and let those wilting flowers do the same. Spring will be here soon enough, and I can really clean up then. And with any luck, my garden and the planet will be a little healthier too.

As I return to the Master Garden program, I do so with a different mindset than when I first became a MG back in 2007. This time, I want to be a smarter gardener. I want to understand the why and science behind gardening. My previous philosophy was plant, kill, repeat. I never stopped to really study and understand. Exploring the reasons and understanding the science behind the benefits of a "messy" garden is one step towards smart gardening. Maybe I don't want a messy garden everywhere, no matter the benefits. But making gardening decisions based on knowledge and science is smart gardening, and I want to do that. ☺

Resources:

- <https://substack.com/@theearthworm>
- <https://laidbackgardener.blog/2023/01/21/long-live-the-messy-garden/>
- <https://crownbees.com/pages/the-advantages-of-a-messy-lawn-and-garden#:~:text=You%20not%20only%20reduce%20your,will%20be%20hard%20to%20see!>
- <https://www.gardeningknowhow.com/garden-how-to/beneficial/parasitic-wasp-info.htm>

AN ABECEDARY OF GARDENING ADVICE

Darrell g.h. Schramm, U.C. Master Gardener, Solano County

Alyssum (*Lobularia*)—plant Sweet Alyssum in bare spots (good for scent and pollinators)

Bougainvillea—in pruning, cut side shoots to 1 or 2 inches; cut close to healthy buds

Clippers/secateurs—after winter or early spring pruning, clean, sharpen, and oil your tools

Dahlias—when planting, provide ample sun, water, a stake, and a cupful of bone meal

Daisies—divide clumping daisies in spring for rebloom in autumn

Delphiniums—when done flowering, cut down to one foot; two weeks later feed with manure water

Eupatorium purpurea (Joe Pye Weed)—for attractive color scheme in garden bed or bouquet, mix *Eupatroium* with *Rudbeckia* or sulphur-yellow roses

Ferns—cut dead or injured fronds near the ground when new growth appears; feed indoor ferns lightly with blood meal or fish emulsion

Gladiolus—plant a new line of *Gladiolus* each week from mid-April to July

Houseplants—wash or wetly wipe foliage occasionally; stir soil with fork occasionally also

Hellebore—in spring, feed with bone meal; in autumn, saturate with manure water

Iris—divide iris in summer; enrich soil before replanting

Jack-in-the-Pulpit—plant 2 inches deep in autumn; do not let dormant tubers dry out entirely

Kniphofia—provide ample water as flowers are forming; allow clumps to form for several years before dividing

Lilies—before planting, mulch with manure where late-flowering lilies are intended, then mulch soil around lilies

Madonna lilies—in August, divide and relocate bulbs; bulbs require only one inch of soil above



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Nerine—plant nerine bulbs in a depth 3 to 5 times their height

Oak leaves and pine needles—make an excellent mulch

Potting soil—one good recipe: 1/3 peat moss, 1/3 loam, 1/3 sand, and a generous amount of bone meal

Pansies—in hot weather, cut back straggly plants and irrigate

Quince—do not hoe or cultivate near the trunk (which damages the shallow roots)

Roses—in December where no snow falls, or after snowmelt, mulch 2 to 4 inches deep

Strawflower—for winter decoration, cut while in bud, bunch, and hang upside down to dry

Thyme—grow to replace salt in low salt diets; also for soups, sauces, eggs, fish, meats, pâtés, potatoes, eggplant, carrots, & zucchini

Tulip—lift bulbs as leaves begin to wither, then let them ripen in a corner of the garden

Umbrella plant—to prevent takeover by weediness (more sprouting stems), grow in large pot or planter

Violets—for strong fragrance, choose Parma violets ('Marie Louise' of deep violet color or 'Swanley White')

Wisteria—in summer prune long shoots to 6 inches, leaving 4 to 6 leaves. Do not cut near the new, tender shoots or buds.

Xanthosoma—grow these calla-like plants in standing water or in pots sunk in a pool or pond

Yucca—if near walkways, snip the sharp tips of leaves with nail clippers

Zephyranthes (fairy lily)—in a sheltered spot, set them 3 inches into soil, 2 inches apart; lift in autumn ☞





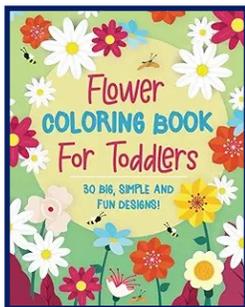
BEST GARDENING BOOKS FOR CHILDREN

Dottie Deems, U.C. Master Gardener, Solano County

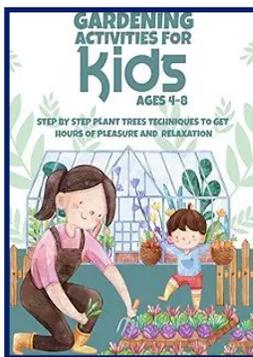
The holidays have been and gone, but has the gift shopping? Did you cross everything off your list? Were there things you didn't even put on your list? The practical things? The educational things? The things that you and the kids could do together all year round, but you didn't even realize? Never knew there were such things? Now is the time to create that list and I'm here to give you a little help. These items don't have batteries, bells, whistles, or flashing lights. Many of the items cost little or nothing, take up little or no space in the house, and can give you a lifetime of happy memories. These items are books. They can be your magic carpet to fun and adventure that you can share with your children and even your grandchildren.

Gardening isn't all about getting your hands in the soil or mud on the knees of your pants. It can transport you in time and space and you will always have a front row seat. Originally, I wanted to give you some information about the wealth of books available for the children in the family ages three to twelve. We can fudge a little at either end of that age group and you will easily see why.

First, what draws a child to a book? PICTURES! Big, bright, colorful pictures, especially the ones in a coloring book. A coloring book such as the Flower Coloring Book for Toddlers is for little one's ages 2 – 4 years old. The book provides big and simple designs of real flowers. The name of each flower is right there on the page so that a child can learn something extra. Coloring books can improve a child's motor skills, eye hand coordination, creativity, and self-expression. If you make copies of each page before the children start coloring, you'll have a wealth of new, clean pictures to color forever. Hang them on the refrigerator or on the walls and you are improving a child's self-confidence and self-esteem. Coloring books are designed for every age group, not just for children. Friends and relatives within the Alzheimer Spectrum can find coloring books

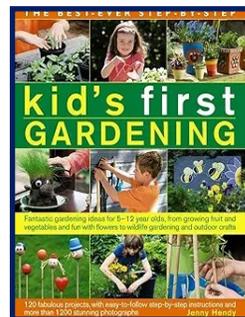


very enjoyable too. Please look at a few and consider them quiet time toys if your child is sick in bed, traveling with little room to spare in a suitcase, or when it is too hot, too cold, or too wet to play outside. (2020) \$7.29 new.



A new book published this year for children is Gardening for Kids Ages 4-8 plus a companion book, Gardening for Kids Ages 3-5. Both books are available in paperback and on Kindle and Kindle Unlimited, a part of Amazon, and are anywhere from FREE on up. The author, B. Richard, is a psychologist and avid gardener. The information in the books is well presented, easy to follow, and the books are bright, colorful, and attractive to children.

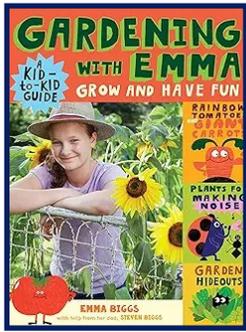
The Best Ever Step By Step Kid's First Gardening by Jenny Hendy was published in 2017 and "contains 120 easy-to-follow step-by-step projects suitable for children ages 5 to 12." Directions for the projects are easy to follow plus there are more than 1,100 color photographs to show you what to do and how to do it. I don't know if there is anything the author left out, it certainly doesn't seem so. I think this book will become a classic and is only \$11.99 in paperback, brand new. Free shipping if you have Prime! You can buy it used on Amazon for slightly more than the price new.



Gardening with Emma, written by thirteen-year-old Emma Biggs and her dad Steven Biggs (2019) as a kid-to-kid gardening guide. Emma and Steve both have the gardening "bug", and the book is full of colorful pictures and practical knowledge. How

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(Continued From Page 5—Sprouts in the Garden: Best Gardening Books for Children)



could I give you a list of children's books without including one written by a child? Emma knows the group she is writing for, ages 8-12, and has done an excellent job. It is the most expensive book on my list at \$15.80.

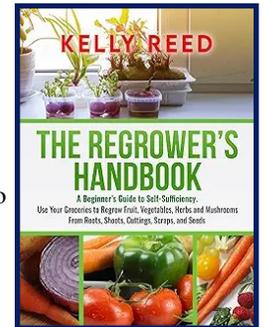
The last item on my list was meant to be the topic of this whole article until I found there were many books written on the topic (news to me) that are fun,

attractively packaged, well-priced, interesting, and educational. They cover the topic of re-growing plants from your kitchen waste. The first of the books is No Waste Kitchen Gardening by Katie Elzer-Peters (2018). Katie instructs you how to "grow and re-propagate produce from food waste." Believe me, this is much more than putting an avocado seed in a jar of water or a potato that has already sprouted in the ground. I

have even learned how to propagate stems of cilantro I was tossing into the compost bin! It should mean less trips from kitchen to refuse company tote. This alone could make a house-partner or teen ecstatic and I consider that a five- star project! The book is on Kindle, paperback, and hardback priced from my favorite which is "FREE" to about \$19.00+.

The Regrower's Handbook: A Beginner's Guide to Self-Sufficiency.

(2023) Find it on Kindle, Kindle Unlimited for free, hardcover for \$19.99, and paperback for \$16.99. The book is a wealth of information if you are ready to change your life and lifestyle. Follow author Kelly Reed and not only learn to regrow your fruit and vegetables, but also to save money you never knew you were wasting. This is not kid stuff, but it is really enlightening. ✕



SAVING VEGETABLE SEEDS

Sherry Richards, U.C. Master Gardener, Solano County

Seed catalogs and nursery displays are exciting with new kinds of vegetable seeds to try! Gardeners like to save seeds to preserve heirloom varieties passed down from family or friends or to grow favorite seeds no longer available from seed companies.

When saving seeds, it is important to know plant name, species, name of any variety/cultivar. Is it self-pollinating, open-pollinated, hybrid or heirloom?

Information should be on plant tags or seed packages. If you do not know the pollination method, call Master Gardeners (MGs).



Examples of Various Seeds from Seed Packages

Photo Credit: All Photos in This Article by Sherry Richards, UC Master Gardener; Used With Permission

Plant Names:

1st - "genus": a closely related group of plants.

2nd - "species" (epithet): a subspecies of a genus with naturally occurring differences such as leaf shape.

3rd—'variety or cultivar': propagated by humans and a member of the same species, but differ such as, one variety has pink flowers, another white.

Choosing Vegetable Seeds to Save

Self-pollinating = Good to Save

Both female and male blossoms on plant for fertilization - on plants separately or both male and female reproductive parts within one blossom. Seeds saved should produce plants/vegetables like parent plant.

Open-pollinated = Good to Save

Pollen moves between plants by pollinators such as insects, animals or wind. This is referred to as "cross-pollination." These plant seeds are good to save, growing plants and vegetables like the parent plant with an exception:

Exception: If the cross-pollination was with pollen from a different variety/cultivar of a species, seeds from the plant will produce inferior plants and vegetables.



I was late harvesting Calendula flower heads - some plants easily sow their own seeds to reproduce themselves. Lettuce, arugula & parsley easily reseed.

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(Continued From Page 6—Saving Vegetable Seeds)

To avoid This Mistake:

- Grow only one variety of a species; distance plants (this varies depending upon crop).
- When the plants are flowering provide a barrier to exclude insects – netting or screen over the plant, use mesh bags over male & female blooms before they open; hand-pollinate plants, or plant to have different flowering times.
- *Some common cross-pollinating crops:* **Brassica** family including cabbage, broccoli, kale; **Cucurbit** family, including zucchini and other summer squash, winter squash, pumpkins, gourds, cucumbers, melons, carrots, and corn.

Hybrid Plants

Hybrid plants are a cross between two varieties of the same plant species. Seeds collected and grown from a hybrid may produce disappointing results.

Heirloom Plants

Heirloom plants (open-pollinated) are usually from before 1940 or at least 50 years old. Seeds produced by them should grow veggies like the parent plant, unless cross-pollinated by a different variety of a species.

Harvesting, Drying and Cleaning Seeds

Save seeds from healthy plants and vegetables. It is helpful to know what the seed looks like for harvesting and separating seeds from debris. Always put plant name, month/year saved on seed packages, collection tray/bag; drying trays; and storage containers.

Dry Method: Let pods (such as beans or peas) dry on plants then harvest, open pods, and remove seeds; harvest seeds from dried flowers of plants such as arugula, lettuce, and chard. Remove remaining moisture - spread seeds out for a few days.

Seeds in Dried Flowers: Separate seeds from “chaff” (flower debris) with seed “sifting” equipment you can buy. Hand separate; use colanders, tea strainers, sieves or screen material stretched across a frame.

Wet Method: Vegetables such as tomatoes, squash and cucumbers – scoop the seeds out and process. Some veggies like cucumbers and summer squash are eaten before the seeds are fully mature. Let some fully mature before harvesting seeds. See details in link – “Seed Saving Basics” from Oregon State University.

Note on Biennial Plants: These plants need two growing seasons to set seed, i.e., carrots, celery, parsley, and kale.

Storing Seeds

Use paper or plastic envelopes/bags to store dried seeds – then store in tightly sealed containers. Large quantities of seeds can go directly into tightly sealed glass jars. Ideal storage temperature is about 45 degrees Fahrenheit. Store seeds in a refrigerator; keep sealed envelopes/containers in the coolest, driest, and darkest location available.

Popular Seeds to Save

See the provided link to University of California (UC) Marin County Master Gardeners for “Saving Specific Plant Seeds” for details about saving vegetable seeds: tomatoes, squash, melons, peppers beans and peas.

How Long Will My Seeds Last or Will they Germinate?

Some seeds last years. See the provided link from the Solano County Master Gardener blog: “Seed Viability (Or Will Those Really Old Seeds in My Garage Germinate?)” It includes a way to check germination rate. x



Put seeds and chaff into a flat container – go outside and gently blow chaff away



My “not so fancy” sifters!

For More Information:

- Solano Master Gardener Hotline: (707) 784-1322 email: mgsolano@ucanr.edu
- Under the Solano Sun, “Seed Viability...” Feb 17, 2014, Erin Mahaney, Master Gardener Solano County <http://solanomg.ucanr.edu>
- “Saving Specific Plant Seeds;” “Seed Saving Basics” Master Gardeners Santa Clara County, 2023 <http://marinmg.edu>
- “Seed Saving Basics” OSU Extension Service “A Step-by-Step Guide to Saving Seeds” Maud Powell, Small Farms, March 2010, <http://extension.oregonstate.edu>

References:

- “Seed Saving Basics,” Monthly Tips, UC Master Gardeners (Mgs), Santa Clara, CA, 2023
- California MG Handbook, “2nd Edition; UCANR, Pub 3382, 2015 Dennis R. Pittenger, Editor
- Oregon State University (OSU) Extension Service, “A Step-by-step Guide to Saving Seeds, Maud Powell, Small Farms, March 2010
- “Horticultural & Home Pest News” and Iowa State University Extension Outreach “Which plants are easier to save seeds from?” Aaron Steil, Consumer Horticulture Extension Specialist
- UC Marin County Mgs “Saving Seeds: Select, Collect, Store, Sow” 2023
- Washington State University Snohomish County Extension “Community Horticulture Fact Sheet #17 – Saving Seeds from Heirloom and other Vegetables” 7/12
- University of Nebraska Extension, Yard, and Garden, 01/20/2016, Ted Griess, Extension Horticulture Assistant.

HERE'S WHERE TO FIND OUR SOLANO MASTER GARDENERS THIS WINTER AND INTO SPRING

By Ruth Clawson, U.C. Master Gardener

Follow our **SOCIAL MEDIA ACCOUNTS** on Instagram ([ucmastergardenerssolano](https://www.instagram.com/ucmastergardenerssolano)) and Facebook ([UCCE Master Gardeners of Solano County](https://www.facebook.com/solanogardeners)) to see what we are up to and to get local gardening tips! This is an easy way to stay up to date on all of our events and opportunities!

<https://www.instagram.com/ucmastergardenerssolano>

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

AT OUR OFFICE (501 TEXAS STREET, FAIRFIELD) WE HAVE THESE GREAT WORKSHOPS COMING UP:

January 10th- 6pm

RAINWATER CATCHMENT

Learn the ABCs of saving your rainwater. This presentation will focus on the methods of collection, types of collection, and gray water. There will be great information about containers and equipment.

March 9th, 9am

TOMATOES AND VEGGIES WORKSHOP

Master Gardeners Nanelle and Jeanine will lead this workshop. It will be the perfect time to talk about our summer tomatoes and veggies and to take home some beautiful starts grown by Master Gardener ,Tina. Join us.

April 20th, 9am to 12pm

SPRING PLANT EXCHANGE

Don't miss this free event. Bring plants, cutting, and seeds to share, and enjoy choosing new ones to take home. Or just come and find something you'd love to try. We always have a beautiful and plentiful collection to choose from!

May 25th. 9am

BUTTERFLIES WORKSHOP

Learn all about butterflies with Master Gardeners Jeanine and Dave. More details to come.



Dunnell Nature Park Monthly Talks are on the second Saturday of each month at 9:30am. You'll find Master Gardeners sharing great information there—3351 Hillridge Drive, Fairfield. Upcoming talk topics include:

- ◆ **JANUARY 13th- Planning for Spring Flowers** with Jamie and Ruth, 9:00 am. In this one hour workshop we will learn about plant and seed selection for Spring flowers. We will also discuss great perennials that will give flowers for years to come. And we will include basic rose pruning to promote Spring flowering too.
- ◆ **FEBRUARY 10th- Integrated Pest Management** with Teresa, 9:00 am. Come learn about the 10 most wanted bugs in your garden. The good guys. The bad guys. Aphids to gophers. How do you get rid of them?
- ◆ **MARCH 9th- Snakes in the Garden. Good or Bad?** With Gigi and Carl, 9:00 am. Most of us freeze when we see a snake. Some of us run for the shovel or hoe to kill it. What should we do? We will help identify different snakes and their behavior. Get tips on how to avoid running into them. We will also talk about the service they provide as well as the danger. Families welcome!
- ◆ **APRIL 13th- Solano Farms and Gardens** with Ruth and Carl, 9:00 am. Inspired by fellow Master Gardener Winona, Carl and Ruth will share what they've learned from visiting some great local farms, gardens, and ranches. You may just want to plan some visits of your own!
- ◆ **MAY 11th- Amazing Bees** with Jan and Shari, 9:00 am. This will be an introduction to the broad array of native and non-native bees living here in Solano County, with suggestions on how you can help our bee population to thrive!
- ◆ **JUNE 8th- House Plants** with Jan and Diane, 9:00 am. Improve your home environment with houseplants! Learn how to choose the right plant, the mystical properties of watering, what pests you may encounter, and more!

OUR POLLINATOR PATHWAY

Do you need some drought-tolerant winter to spring flower ideas? Stop by. The **UCCE Master Gardeners of Solano County Office** is located at 501 Texas Street, Fairfield, and our Pollinator Pathway runs through our parking lot and has some interesting plants and flowers to inspire you.

HERE’S WHERE TO FIND OUR SOLANO MASTER GARDENERS THIS WINTER AND INTO SPRING, CONTINUED...

By Ruth Clawson, U.C. Master Gardener

Follow our SOCIAL MEDIA ACCOUNTS on Instagram ([ucmastergardenerssolano](https://www.instagram.com/ucmastergardenerssolano)) and Facebook ([UCCE Master Gardeners of Solano County](https://www.facebook.com/solanogardeners)) to see what we are up to and to get local gardening tips! This is an easy way to stay up to date on all of our events and opportunities!

<https://www.instagram.com/ucmastergardenerssolano>

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

Vacaville Library Talks:

Stop by the Vacaville Library, 1020 Ulatis Drive, on the Third Thursday of each month, 6-7pm, for an interesting gardening discussion. Deb Gordon and Christina Ruark will be presenting on the following topics:

- ◆ **JANUARY 18th- Container Gardening Through the Seasons**, 6-7pm. What’s the difference between container and in-ground plantings and care? Can you grow vegetables in a container? What are thrillers, fillers, and spillers? Come find out. Master Gardeners Deb and Christina will also cover the basics on different irrigation needs for containers.
- ◆ **FEBRUARY 16th- Seeds—Choosing, Purchasing, and Saving**, 6-7pm. Come learn all about seed catalogs and what to consider when ordering, harvesting seeds, and saving and storing seeds for next year. Enjoy making a seed bomb with a gift card.
- ◆ **MARCH 21st-Herbs!** 6-7pm. Deb and Christina will cover finding resources for finding and purchasing the right herbs, growing herbs, and harvesting and storing herbs.
- ◆ **APRIL 18th-WEEDS**, 6-7pm. What is a weed? What are common weeds in our area? What are the best resources and best abatement practices in our area? Come find out, do some hands on identification, and play Weed Bingo!
- ◆ **MAY 16th-IT’S HOT! –SURVIVING THE HOT WEATHER**, 6-7pm. This talk will examine preparing your garden for hot weather, irrigation needs and types, seasonal changes for North, South, East, and West, providing temporary shelter from wind, and taking care of yourself in the heat too. Get ready for summer!
- ◆ **June 20th-WORMS**, 6-7pm. Who are they? What do they do? Why would you want them? What’s worm composting? Bring a shoebox and take home your starter worm composting bin. (You must RSVP that you’ll participate in the shoebox activity to rehabnurse@sbcglobal.net so she’ll have enough worms.)

AS ALWAYS, WE WILL SEE YOU AT:

The Farmer’s Market in Vallejo is every Saturday from 9am to 2pm. The Market is located at 400 Georgia Street. **This is a year-round market. Bring your gardening questions to our experienced Master Gardener’s table.**

STOP BY ANYTIME:

Children’s Garden

275 Beck Avenue, Fairfield, CA, 94533
Master Gardener’s work monthly at the Children’s Memorial Garden, This might be a great place to visit or to stop by for some gardening inspiration.

The Sensory Garden

Behind Fairfield Civic Center Library
Drop by The Sensory Garden anytime at 1150 Kentucky Street near the Civic Center pond. Teresa Lavell coordinates gardening efforts here. There are an abundance of interesting plants to see, touch, and smell!

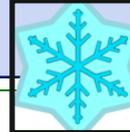
The Willis Jepson Memorial Native Garden

is at 4699 Pena Adobe Road in Pena Adobe Park, Vacaville. Master Gardeners have undertaken a significant renovation and included many native plants. Plants include signage with OR codes connecting you to the Calscape website <https://calscape.org/>

The UCCE Master Gardeners of Solano County Office is located at 501 Texas Street, Fairfield. For more gardening and event information, visit our website <https://solanomg.ucanr.edu/>. UC Master Gardeners staff a Helpline serving Solano County which is available 24 hours a day, 7 days a week. Call 707-784-1322 or email: mgsolano@ucdavis.edu.



WINTER GARDENING GUIDE



	JANUARY	FEBRUARY	MARCH
P L A N T I N G	<ul style="list-style-type: none"> ◇ Sow California poppy (<i>Eschscholzia californica</i>) seeds for spring color ◇ Sow indoors cool-season edibles such as chard, kale, and lettuce ◇ Plant winter blooming shrubs; purchase now while in bloom to see what you are getting ◇ Harvest citrus as it ripens—taste for flavor 	<ul style="list-style-type: none"> ◇ Plant summer bulbs such as gladiolus, cannas, ranunculus, anemone, dahlia, lily, tuberous begonia and delphinium ◇ Plant leaf crops like lettuce, cilantro, beets, carrots, chard, peas, and spinach directly in the ground ◇ Indoors, start seeds of eggplant, peppers, and tomatoes. Transplant outdoors in 6 to 8 weeks ◇ Plant berries: raspberry, boysenberry, and blackberry 	<ul style="list-style-type: none"> ◇ Almost any plant (except tropical) can be planted now. Start seeds of old-fashioned favorites such as apricot foxglove, bachelor's button, blue flax and Oriental poppies. Summer sizzlers like cosmos and zinnias also grow more vigorously from a seed start and catch up fast to nursery-started plants ◇ Plant warm season annuals like ageratum, marigold, petunia and sunflower ◇ Switch out cool-season vegetables for corn, beans, peppers and tomatoes
M A I N T E N A N C E	<ul style="list-style-type: none"> ◇ Prune deciduous plants while dormant to keep grapes, roses, fruit and shade trees shapely ◇ Check mulch. Add more to paths and beds for weed suppression ◇ Protect tender plants when cold nights are predicted. Water well—dry plants are more susceptible to frost damage ◇ Fertilize azaleas after bloom; cymbidiums with 1/2 strength fertilizer every week or so ◇ Collect rain water to use on your garden 	<ul style="list-style-type: none"> ◇ Pinch fuchsias through March; for every stem you pinch, you'll get 2; for every 2 you'll get 4 ◇ Fertilize: citrus and fruit trees, cane berries, roses (only after you see new growth begin) ◇ Fertilize fall planted annuals and perennials, and established trees and shrubs with an all-purpose fertilizer. Wait on azaleas, camellias, and rhododendrons until after bloom ◇ Mulch exposed areas to prevent weed seeds from germinating ◇ Repot cymbidiums if necessary 	<ul style="list-style-type: none"> ◇ Fertilize almost everything ◇ Flowering and fruiting plants need phosphorus-rich fertilizer ◇ Green leafy plants such as lawns and lettuce require nitrogen ◇ Root plants such as potatoes, beets, and bulbs appreciate a handful of potassium. Read the labels. ◇ Once soils have dried out, give your irrigation system a tune up. Then set to water deeply and infrequently to encourage deep root growth
P R E V E N T I O N	<ul style="list-style-type: none"> ◇ Control snails and slugs by eliminating hiding places, or hand pick ◇ Use a dormant spray to control over-wintering insects on deciduous plants. Control peach leaf curl with lime sulfur or fixed copper. Follow directions for proper application ◇ Spray roses with dormant oil to control over-wintering insects such as aphids, mites and scale. Thoroughly coat trunk, branches, and twigs. 	<ul style="list-style-type: none"> ◇ Snails and slugs are dormant two times a year, during the hottest part of summer and during the coldest weeks in winter. This is about the time they head out for feeding. Get out early and hand-pick ◇ Don't prune out any frost damaged growth for another month or so— the outer dead foliage may protect healthy growth beneath from further frost damage 	<ul style="list-style-type: none"> ◇ Now is the time to get a jump on insect infestations; check for signs of aphids (distorted new growth and tiny, often green or black insects) and spittle bugs (under white foam on stems). Both can be effectively sprayed off with a garden hose ◇ Handpick snails at night, or use bait— follow all directions

Seeds For Thought is produced by
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It is available through the internet for free download:

<http://cesolano.ucdavis.edu/newsletterfiles/newsletter130.htm>

A handwritten signature in black ink that reads "Baumbach".

Jennifer M. Baumbach
Master Gardener Program Coordinator



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Solano County Master Gardeners

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SEEDS FOR THOUGHT

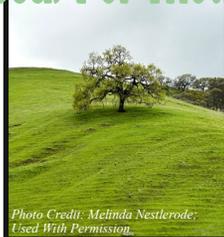


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**WINTER
2023**