DIY! Grow and Arrange Cut Flowers from the Home Garden and ... Support Your Local Flower Growers—by Orin Martin

Note: Portions of this article originally appeared in earlier issues of the News & Notes. They’ve been revised and updated to inspire your flower gardening efforts, to highlight some of our local organic cut flower growers, and in anticipation of the upcoming cut flower workshop in the Chadwick Garden on July 15.

The first, last and deciding reason for growing cut flowers is for the sheer beauty of it. They are uplifting—both literally and figuratively, high-energy plants. I once read a psychology master’s thesis documenting that a bouquet in the vicinity is a mood enhancer. Twenty-something pages later, my response: “really, now what are the odds of that?” In addition to the visuals, scented flowers seem to activate nostalgia and memory and, by and large, good ones at that.

Gardening is both science and art, and a skills-based craft as well. Science is to be understood, mastered, respected, and applied; it is, after all, the basis of life. But art or aesthetics (the philosophy of the beautiful) informs and enhances our existence. Just as vegetables and fruits are food for the body, flowers can be thought of as food for the spirit and soul.

Adding Beauty, Attracting Pollinators and Beneficials

In an everyday sense, cut flowers offer gardeners the ability to have flowers in the garden and in the vase throughout the year: think endless gray days in February and an antidote. You can throw a little “shade” on the dark dreary days of winter by bringing captured sunlight into the house by way of cut flowers.

Yet even in the best of times, the cost of cut flowers lies somewhere between a luxury and prohibitive. You can grow your own for pennies per plant with annuals. And, annual flowers will reward you with arms full of blooms. They are true “opportunists,” germinating, growing, and offering a profusion of blooms quickly—often as quick as 6 to 12 weeks from transplanting.

Cut flowers in the garden also make biological sense. The vegetable garden is a system somewhat out of balance. Most of the vegetables we grow don’t feature flowers prominently, if at all. Showy flowers attract crop pollinators (often winged insects).

Additionally, the concept of using flowers to attract and maintain populations of beneficial insects that in turn aid in controlling detrimental insects is now a well-documented sector of entomology. Terms such as farmscaping, provisioning of resources to natural enemies, habitat management to enhance biological control of arthropod pests and the like speak to the confluence of age-old folk wisdom as well as the research-based studies showing that fewer crop pests are found as the diversity of an agroecological system (your garden!) increases.

Flowering plants provide shelter, habitat, moisture, and nutrition to various beneficial insects. These beneficial insects exert a huge control on detrimental insects, including aphids, mites, thrips, mealy bugs, and unwanted caterpillars.

Provisioning for the “3 P’s”

With stewardship in mind, we would do well to design or amend our fields, orchards, and gardens to provision for beneficial insects, and not to get too alliterative here, but to provision for the 3 P’s—pollinators (native and non), predators and parasitoids (beneficials).

continued on page 2
In provisioning, it is often about providing plant diversity to help create habitat that both shelters and nourishes the 3 P’s. Habitat is enhanced by creating a tiered canopy—plants from the ground level to treetop high—as well as by offering a range of annual, perennial, herbaceous, and woody plants (shrubs and trees). Flowers provide insects with protein (pollen) and carbohydrates (nectar), the building blocks of any diet. They in turn pollinate not just the flowers but also our food crops, while beneficials reduce insect damage.

Dr. Mariah Spivak, professor of apiculture and social insects at the University of Minnesota and a 2010 Mac Arthur Fellowship (a.k.a. “Genius Grant”) recipient eloquently sums up the simple but sophisticated and effective notion of growing flowers—“Improving habitat for native pollinators and beneficials is a step-by-step guide for changing our stewardship of the earth; it is a tangible way for people of all ages to make a difference. Active participation in this vital, grassroots revolution is easy: Plant flowers! Sure, by creating floral and nesting habitat, bees, butterflies, and countless other wildlife species will prosper. But through the same simple effort, you will be ensuring abundance of locally grown, nutritious fruits and vegetables. You will beautify our cities, roadways and countryside. You will be helping to spread the word about the urgent need to reduce pesticide use, while at the same time creating habitat for beneficial insects that prey upon crop pests. You will be increasing natural diversity and ecological resilience through pollinator gardens, bee pastures and flowering field borders that stabilize the soil, filter water runoff and pack carbon into the roots of native prairie plants. For many of our Earth’s current environmental ills, you will be part of the solution.”

So, to echo Dr. Spivak’s advice, I say, JOIN THE REVOLUTION—PLANT FLOWERS! Viva la revolucion— the quiet revolution. And Earth first, Earth first, in a very gentle manner.

Support Your Local Flower Growers!

Not to sound too negative a note here, but the cut flower bouquets you find in many chain grocery stores are indeed pretty and pretty cheap, too. But in reality, these eye-catching flowers are expensive in that they are produced with many negative environmental and social consequences—

- Most retail/commercial flowers are produced “offshore” (a high percentage in Central and South America). These production systems are chemical-, water-, and energy-intensive.
- The environmental laws in these offshore countries are often lax, and thus pesticides and fungicides now banned in the US are featured.
- These flowers are well traveled (1,500–3,000-mile footprint) and in the aggregate contribute to atmospheric as well as land and water pollution worldwide.
- As or more importantly, the working conditions in these controlled (often enclosed greenhouses) growing environments are toxic for workers, a high percentage of whom are women of child-bearing age, and some are in fact children themselves.
- Workers in many of these “offshore” flower operations also often endure low wages, long hours, and abusive treatment.

So, what are some positive alternatives? You can go—

- Seasonal
- Local
- Organic/Sustainable

Just as there are “locavores” and “100-mile diets,” how about the “100-mile bouquet” or better yet, the “100-foot bouquet.”

The first term involves buying your flowers from local farmers’ market and other local resources. In addition to being hard-working, many of these “nouveau” flower growers are also flower arrangers; keep them in mind for your social events as well as business venues. Develop a personal relationship with your flower farmers, as no doubt many of you have done with your vegetable and fruit growers. You should endeavor to support these often young, emerging organic growers—see page 6 for more information on some local flower farmers that graduated from the UCSC Farm & Garden’s Apprenticeship training.

In a sense, you could say about this “demographic”: little money in their pockets, holes in their jeans, dirt under their fingernails, BUT, their “aim is true,” their acumen both nascent and ascending. To me, they are the light of the world; true servants of the seasons in the morning’s early light. They spend their days, backs to the sun, putting their shadows on the ground, trying to coax exotic flavors, nutrition, and sublime beauty out of sometimes-recalcitrant plants and soil. So in a sense, a floral sense, you should “root down” with real field flowers.

The second term (the 100-foot bouquet) entails growing your own. On July 15, we intend to “school you

continued on page 6
**Grow Your Own!Selecting, Growing, and Arranging Your Backyard Bouquet**

**Sunday, July 15, 9:30 am – 1:00 pm**  
**Alan Chadwick Garden, UCSC**

In this workshop, Alan Chadwick Garden manager Orin Martin and Caroline Martin, owner of Wild Moon Flowers, will discuss how to select a range of blooms and grow them organically. Orin will focus on the many varieties of plants that can generate year-round blossoms in your yard, and Caroline will demonstrate the basic steps and principles used to create your own bouquets.

Cost of the workshop is $30 general admission (pre-registered)/$40 (at the door); $20/$30 for Friends of the Farm & Garden members; $15/$25 for limited income and beginning farmers; $5 for UCSC students.

To pre-register online, see tinyurl.com/2018workshops. For more information call 831.459-3240 or email casfs@ucsc.edu.

**Summer Fruit Tree Pruning and Care**

**Saturday, August 4, 9:30 am - 12:30 pm**  
**UCSC Farm**

Summer pruning is one of the best ways to ensure the health and productivity of your fruit trees. Learn summer pruning techniques from Matthew Sutton, owner of Orchard Keepers, and Orin Martin, manager of UCSC’s Alan Chadwick Garden, at this demonstration workshop.

Cost of the workshop is $25 general admission (pre-registered)/$35 (at the door); $20/$30 for Friends of the Farm; $15/$25 for limited income and beginning farmers; $5 for UCSC students.

To pre-register online, see tinyurl.com/2018workshops. For more information call 831.459-3240 or email casfs@ucsc.edu.

**Docent-Led Tours of the UCSC Farm**

**Sundays, August 6, and September 3, 2 pm - 3:30 pm**  
**UCSC Farm – meet at the Hay Barn**

Join us for a guided tour of one of Santa Cruz’s most beautiful locations—the 30-acre organic farm at UC Santa Cruz. The monthly tour is free and does not require a reservation. Tours meet at the Cowell Ranch Hay Barn.

**7th Annual Farm to Fork Benefit Dinner**

**Sunday, August 19, 3 pm - 8 pm**  
**UCSC Farm & Cowell Ranch Hay Barn**

Celebrate and support the Farm & Garden’s Apprentice-ship and other educational programs at our annual fund-raising dinner. Before dinner, join an on-farm reception and farm tours. Learn about our work to support hunger-free campus and basic needs efforts while you enjoy a wonderful field-side meal prepared by My Mom’s Mole. Dessert and dancing in the Hay Barn to follow!

Tickets are $100 and are available at specialevents.ucsc.edu/farmtofork. For information on paying by check, call 831.459-3240 or send email to casfs@ucsc.edu.

**Making Medicines from the Garden**

**Sunday, September 9, 9:30 am - 12:30 pm**  
**Cowell Ranch Hay Barn**

This class will teach you how to make and use many different herbal preparations for common ailments, including teas, oils, compresses, soaks, steams, baths, tinctures, and liniments. Workshop instructor Darren Huckle is a licensed acupuncturist trained in Western and Chinese herbal medicine. Darren is the founder and owner of Roots of Wellness in Santa Cruz.

Cost of the workshop is $30 general admission (pre-registered)/$40 (at the door); $20/$30 for Friends of the Farm & Garden members; $15/$25 for limited income and beginning farmers; $5 for UCSC students.

To pre-register online, see tinyurl.com/2018workshops. For more information call 831.459-3240 or email casfs@ucsc.edu.

**Fall Harvest Festival at the Farm!**

**Sunday, September 30, 11 am - 5 pm**  
**UCSC Farm**

Join us to celebrate the fall harvest with a fun day on the farm! Enjoy live music, great food, workshops, tours, kids’ crafts, fresh produce and much more at this campus and community event. $5 general admission. Free for Friends’ members, UCSC students, and kids 12 and under. For more information or to volunteer, call (831) 459-3240 or send email to casfs@ucsc.edu.

**Save the date for a special event taking place on Saturday, September 8, 11 am–2 pm**

**Through the Back Gate—An Insider’s View of the UCSC Arboretum & Botanic Garden, and the UCSC Farm**

Details and registration information coming later this summer—see Upcoming Events at casfs.ucsc.edu.
New Grants Fund Projects, Scholarships, and Core Support at the Farm & Garden

During our 50th anniversary year in 2017 we received an outpouring of support, which has continued with some new and renewed grants into 2018. Here we highlight recent top grants and gifts, and we want to extend our gratitude to everyone who has provided support over the past year through their donations, Farm & Garden memberships, and in-kind gifts. Your support makes our work possible.

The Helen and Will Webster Foundation has generously awarded $200,000 for operating support for the Center for Agroecology & Sustainable Food Systems (CASFS) and the Farm & Garden, the first of five years pledged as part of a multi-year match with an anonymous donor’s $200,000 and $100,000 from UCSC at the direction of the Chancellor. This multi-year commitment will provide much-needed core support for education and training at the Farm & Garden.

Patty Quillin has greatly increased the apprentice scholarship funding with her $150,000 gift pledged to the Food Justice & Equity Scholarship through Hastings/Quillin Fund of the Silicon Valley Community Foundation. Six apprentices in the 2018 Apprenticeship were the first recipients of these new scholarships, also supported by a $50,000 gift from the Bon Appétit Management Company and by many individual donations this past year.

A grant from the UC Global Food Initiative (GFI) will support the Food Access and Food Security Project in 2018–2019, with $80,900 directly supporting CASFS staff roles as part of an overall $370,000 for all ten UC campuses in the final year of GFI funding. Additionally, state Hunger Free Campus funds will bring $150,000 to UCSC, with $60,000 of that supporting CASFS staff roles on the project. This project’s work addressing student food insecurity is profiled in “Homegrown Help” in the Spring 2018 News & Notes.

We are grateful for Roberta Gordon’s gift of $135,000 for the first two years of five years’ support pledged for a project entitled “Carbon Sequestration through No-Till Organic Agricultural Practices,” which is being led by CASFS Farm Lands and Research Manager Darryl Wong. Watch for this no-till/law-till demonstration project to take root this season in the mid-field area near the ongoing strawberry research at the UCSC Farm.

In the interest of space, we can only briefly thank the following foundations and individuals who provided general support along with scholarship funding this year.

• The M&T Fantastic Family Foundation granted $25,000 for general support for CASFS.

Friends’ Board Opportunities

The Friends of the Farm & Garden Board of Directors is seeking new members to join our Board. Board members work to support the educational, community outreach, and facilities improvements work taking place at the UCSC Farm & Garden. The Board meets monthly. If you are interested, please contact Amy Bolton, Board President, at amadareza@gmail.com for more information and details.

A Rose for Tana

In May, members of the Friends of the Farm & Garden Board gathered in the perennial border at the UCSC Farm to honor the life of long-time Board member and supporter Tana Butler. Tana’s husband Bob Churchill and Christof Bernau, manager of the gardens at the UCSC Farm, planted a bareroot rose and installed a bronze plaque that reads, “In memory of Tana Churchill, who loved this farm and its apprentices.”

Board member Robin Somers shared these words: “While searching for a fitting passage to honor Tana on this day, I chose a line from Cicero, the early Roman orator and humanist who said, ‘the life of the dead is placed in the hands of the living.’ I chose Cicero’s words because 1) he was a writer, as was Tana, and 2) he was a fighter, as she was, and a humanist. Moreover his prayer, if you will, that ‘it is we who keep alive the energy of good people and good deeds’ captures what we’re doing here today in this most beautiful place, the farm that Tana claimed as her church. She said that many times as we walked this path at night after Board meetings, and exactly here, ‘This is my church.’”

continued on page 8
Tips for Growing Carrots & Beets in the Home Garden

Carrots and beets are fun and rewarding crops to grow in the home garden. These warm- to cool-season annuals can be grown almost year round—with careful varietal selection, timely planting, and good storage, you can count on them to provide a nearly continuous source of delicious additions to your salads and other dishes. And since carrots and beets share a number of cultural needs, including similar soil preparation, seedbed management, watering, and weeding, they grow well together in the home garden. Prepare beds and sow them side by side to consolidate similar tasks in the same space.

Here Christof Bernau, garden manager at the UCSC Farm, shares some tips on growing these popular crops.

Soil Preparation and Planting

Carrots and beets will produce in a wide range of soil types, but a lighter sandy loam that allows for greater ease of root movement is ideal. “Ultimately, though, if you’ve developed your soil well with compost and cover crops and have good soil structure, then even on heavier-textured soil you should do well,” say Bernau. If you haven’t yet built up your soil’s fertility, add 1–2 pounds of compost per square foot and work it down to the depth of the root that you anticipate harvesting.

Prepare a relatively fine seedbed without clods, crop residue or debris; because the seeds and emerging plants are relatively small, clumps and clods can inhibit germination. And whether you’re using a spade and fork or a rototiller to prepare the bed, it’s critical to do it at that “sweet spot” when the soil moisture is at 50–70% of field capacity.* “If it’s too wet, you may get crusting, compaction, and clods after you cultivate. If it’s too dry you can pulverize your soil aggregates,” says Bernau.

If you don’t have a push seeder, use the head of a hoe or a rake handle to create a shallow planting furrow. Sow seeds directly into the furrows: carrots should be sown 1/4-1/2” deep in 2”-wide bands at 25-30 seeds per foot or single rows at 18-20 seeds per foot; beets should be sown 1/2” deep at approximately 15 seeds per foot. Cover the seeds lightly with soil. It can take from 8–10 days for beets and 12–14 days for carrots to emerge.

Once your seeds are planted it’s important to keep the surface moist, but be aware of the potential for soil to crust over with overhead irrigation. Heavy overhead watering can break up surface soil aggregates and create a crust that can be difficult for your seedlings to push through.

Some options to avoid crusting include lining up your seed lines along drip lines for a more gentle water application. You can also mulch the planted bed with a very light covering of straw to dissipate the impact of overhead watering.

*Read about the concept of field capacity in Irrigation—Principles and Practices, online at: casfs.ucsc.edu/about/publications/Teaching-Organic-Farming/part-1.html

Another option is to cover the bed with burlap bags to both conserve moisture and protect soil surface structure. “This is a good way to go, but you have to really pay attention to when the plants start to emerge,” says Christof. “Otherwise the cotyledons of the carrots can get caught in the burlap and accidentally pulled out when you lift up the bags, and the emerging beets are likely to hit the bags and bend over.”

Especially prior to the plants’ germination and early on in the crop’s development, it’s also important to keep beds well weeded in order to minimize competition for water and other resources.

Thinning, Irrigation, and Harvest

Once all of the plants emerge, thin carrots to 1-2” apart and beets to 3–4” inches apart, depending on variety (save the nutritious beet thinnings for cooking). “The goal is to thin to where the mature plants will be ‘shoulder to shoulder’ in order to maximize production per row foot without causing undue crowding and competition,” says Bernau. The deep tap root systems of both carrots and beets allow for a relatively high density planting, which will eventually create a canopy to help shade out weeds.

Maintain consistent moisture in the beds to get good crop quality and avoid “woodiness” or “corkiness” in beets or extraneous root hairs on carrots. On the Central Coast, that translates to about an inch of water a week to replace what’s lost to evapotranspiration. Bernau notes that drip irrigation is the best way to conserve water and limit weed growth, but both crops will do well with overhead water.

Carrots mature after 55–60 days (summer) or up to 90 days (winter), depending on variety, and are ready to harvest when the shoulders barely emerge from the

continued on page 8

UCSC Farm & Garden
Growing Cut Flowers (from page 2)

up” and teach you a thing or two regarding the basics of selecting, growing, and most definitely arranging artful “back door” flower bouquets. We are presenting a cut flower workshop that will inform, entertain, and empower you to do just that. The intergenerational tandem of Orin Martin (Chadwick Garden manager) and daughter Caroline Martin (Apprentice Program alumna, Blue House Farm flower grower, and now sole proprietor of Wild Moon Flowers) will put you through your paces.

This workshop will aid you in:
- growing organically
- deciding what to grow for your home bouquets: a thumbnail sketch of annual, biennial and herbaceous perennial flowers (roses are in the mix)
- offer a seasonal almanac detailing degree of ease or difficulty
- demonstrate how to cut, the ideal time of day to cut, what to cut (degree of openness)
- factors/conditions that promote prolonged vase life, including the use of simple, home-recipe floral preservatives
- a list of flower species that attract beneficial insects and pollinators

There will also be demonstrations of how to put together various types of bouquets, including standard tips along with “tricks of the trade.” You should come away edified and no doubt uplifted. Join us in the Chadwick Garden on Sunday, July 15 (see registration details on page 3).

To read more about selecting and growing cut flowers, see the publications posted to the CASFS website:
casfs.ucsc.edu/about/publications/for_the_gardener.html

Farm & Garden Alumni Cut Flower Growers
Santa Cruz and Pescadero Regions

Blue Heron Farm – Dennis Tamura (blueheron.farm/flower). Dennis adopted UCSC garden founder Alan Chadwick’s concept of offering flowers along with vegetables and fruits, and first started selling mixed bouquets in the early ’80s at local farmers’ markets. Today 4 of the 20 acres of Blue Heron Farm in Corralitos are dedicated to flowers, available at farmers’ markets, grocery stores, and through special orders.

Blue House Farm – Ryan Casey (bluehousefarm.com/flowers). Blue House Farm grows 3 acres of flowers on its Pescadero farm, available through six Bay Area farmers’ markets, special events, and their CSA program.

Camp Joy Gardens – Jim Nelson (campjoygardens.org) Camp Joy creates flower arrangement for weddings and other special events, and sells flower starts at their annual plant sales.

Everett Family Farm – Emily Parsons (everettfamilyfarm.com) Find Everett Family Farm’s flowers at their Soquel-San Jose Road farmstand.

Fieldsketch Farm – Laura Vollset (fieldsketchfarm.com). Fieldsketch offers sustainably grown flowers from its Soquel site, along with floral design services. Specializing in roses, they sell to local and Bay Area floral designers along with using their signature crop in their own designs.

Fifth Crow Farm – John Vars, Teresa Kurtak, Mike Irving (fifthcrow.com/flowers). Fifth Crow farm cultivates over forty varieties of annuals and perennials, focusing on the more unusual and pollinator friendly whenever possible. Find them in the form of custom hand-tied mixed bouquets at Bay Area farmers’ markets as well as at the Bi-rite Grocery Stores.

UCSC Farm & Garden (tinyurl.com/ucscflowers) Training farmer-florists for over 50 years! You can find Farm & Garden organic flower bouquets at the weekly Market Cart (Fridays, 12-6 pm). You can also special order flowers for events (see web link), or join the flower CSA to receive a weekly bouquet. Look for a wide variety of flower starts at the annual Farm & Garden Spring Plant Sale.

Wild Moon Flowers – Caroline Martin (wildmoonflowers.com). Wild Moon Flowers is a small scale organic flower farm and floral design studio. They offer weekly bouquet subscriptions, and event flowers.

Beyond the Santa Cruz Area

B-Side Farm – Lennie Larkin (b-sidefarm.com) B-Side Farm in Sebastopol specializes in flower growing and floral design for weddings and other special events. Lennie also teaches workshops and classes on beginning and specialty floral design on the farm.

Bluma Farm – Joanna Letz (blumaflowerfarm.com) On a 2-acre farm in Sunol (East Bay), Bluma Farm produces over 50 varieties of flowers for markets and special events.

Farmermaid Flowers – Courtney Mellblom (farmermaid.com). Located above Morro Bay, Farmermaid offers specialty cut flowers and floral design services.

Front Porch Farm – Zoe Hitchner (fpfarm.com/flowers) This Healdsburg farm grows flowers for a variety of regional and Bay Area outlets, including farmers’ markets, groceries, and florists. They also offer event design services, bulk flowers for DIY, and on-farm classes.

Hidden Villa – Lanette Anderson (hiddenvilla.org) Hidden Villa in Los Altos Hills is an environmental education non-profit with an organic flower and vegetable farm located on-site. They offer a weekly bouquet CSA, sell flowers at the Los Altos farmer’s market, provide floral designs for weddings and other special events and teach on-farm workshops.
Here’s a brief look at what some of the graduates of the Apprenticeship training program at the UCSC Farm & Garden have been doing recently, along with some of their recent writings. Apprenticeship alumni, we welcome your updates! Please send them to casfs@ucsc.edu.

Thom Broz (class of 1995) is president of the Santa Cruz County Farm Bureau, the first organic grower to be elected to that position. After graduating from the Apprenticeship, Thom founded Live Earth Farm (liveearthfarm.net) in Watsonville. The Farm Bureau recently held its annual meeting at the Cowell Ranch Hay Barn, the new headquarters of the Center for Agroecology & Sustainable Food Systems.

Vera Chang (2009) is a doctoral student in UC Berkeley’s Environmental Science, Policy, and Management Program. Her article on the #MeToo movement efforts of women farmworkers was recently published by Civil Eats (civileats.com/2018/05/21/meet-the-farmworkers-leading-the-metoo-fight-for-workers-everywhere), and translated into Japanese for Japan Agricultural News.

Annie (Thomas) Drevno (2009) holds a post-doctoral position at Santa Clara University. Her research on Central Coast growers’ attitudes toward the water quality regulatory process appears in the most recent issue of California Agriculture (calag.ucanr.edu/archive/?article=ca.2018a0015).

Julie Stultz Fine (2002) recently received her Masters’ degree from the Plant Biology program at the University of Massachusetts at Amherst, and is now the Northeast territory representative for Johnny’s Selected Seeds, which specializes in non-GMO and organic seed production.

Leigh Gaymon-Jones (2016) is the Director of Education with CUESA (Center for Urban Education about Sustainable Agriculture) in San Francisco. Learn more about CUESA at their website, cuesa.org.

Janaki Jagannath (2013) was featured on a recent Delicious Revolution podcast (deliciousrevolutionshow.com/episode-feed/2018/53-janaki-jagannath), discussing an agroecological approach to social justice in California’s San Joaquin Valley.

Lennie Larkin (2011) owns B-Side Farm in Sebastopol (see page 6) and recently became the West Coast Director for the Association of Specialty Cut Flower Growers (www.ascfg.org).

Mike Nolan (2006) owns Mountain Roots Produce (mountainrootsproduce.com) in Mancos, Colorado, an area that has experienced ongoing drought issues. Mike wrote a column for the summer issue of Edible Southwest Colorado about the many challenges facing farmers and the important role of consumer advocacy. You can read it at ediblesouthwestcolorado.com/farmers-in-a-drought-year.

Josh Slotnick (1991) was recently elected Missoula County Commissioner in an upset win over the long-time incumbent. Josh has been farming in Missoula since the early 1990s and co-founded the town’s Garden City Harvest program and the PEAS (Program in Ecological Agriculture and Society) farm and educational program in conjunction with the University of Montana. He and his wife Kim Murchison (1990) also started Clark Fork Organics, a small family farm that offers annual internships.

Applications Open for 2019 Apprenticeship Program

Aspiring organic farmers and gardeners are invited to apply for the 2019 Apprenticeship in Ecological Horticulture at the University of California, Santa Cruz. The upcoming six-month program starts in April 2019. Course fee support at different levels is available, including the Simply Organic annual scholarship and Matthew Raiford Scholarship. AmeriCorps funding can also be used for course fees.

Program information, application materials, details on course fee waivers, and a list of dates for upcoming orientation tours are available online at casfs.ucsc.edu/apprenticeship. Application deadlines for the 2019 program are August 30, 2018 for international applicants, and September 30, 2018 for U.S. residents.

For more information about the Apprenticeship, please contact the Center for Agroecology & Sustainable Food Systems at 831.459-3240, or at casfs@ucsc.edu. Learn more about CASFS at casfs.ucsc.edu.
Grants Fund Projects, Scholarships, Core Support (from page 4)

- The UNFI Foundation granted $25,000 for general support of CASFS educational programs.
- Jen Colby and John Wilcox provided a gift of stock of $15,144 for the Apprenticeship.
- Newman’s Own Foundation granted $15,000 in general support of the Farm & Garden.
- Joanna Miller’s gift of stock will provide $15,000 for the Farm & Garden.
- Henry Chang of Henryorg Foundation has provided $12,000 for scholarships.
- An anonymous Friends member has given $8,223 for the benefit of CASFS.
- AgaDino Foundation granted $7,000 to support scholarships.
- Drew and Myra Goodman’s gift of $5,000 will provide general support for CASFS.

Many, many thanks to these donors and hundreds of others who have provided gifts from $5 to $5,000 over the past year to keep the Farm & Garden and CASFS thriving!

Growing Carrots & Beets (from page 5)

soil surface; if harvested too early there may be a bit of a piney taste or sharp flavor from the terpenes that the plants naturally develop, which will be more pronounced in younger plants. Beets mature in 40–60 days, when the roots push above the soil surface.

In the summer, the harvest window for both crops is about 2–3 weeks once plants reach maturity —after that, quality starts to decline. In winter, with shorter days, cool temperatures, and consistent soil moisture, the same varieties can be harvested for up to 4–6 weeks.

These longer harvest windows mean that a crop maturing in January can be dug up, the tops trimmed, and the roots refrigerated in a lightly perforated bag to carry you through much of the winter. Note also that carrots grown through the middle of the summer will not be as high a quality; the cooler days and nights of winter allow for more sugars to develop.

Remove damaged foliage (along with the larva) and feed it to your chickens, put it in a really hot compost pile, or throw it in your green can.

Carrot rust fly is another common pest. “It’s important to not have carrots in the ground year round,” says Bernau. “Make sure you have a 2–3 month period where there aren’t carrots available to the pest in order to break the life cycle.”

The adult rust fly is attracted to the chemical compound that’s released by the plants when you weed and harvest. Do these activities early or late in the day to minimize activating the volatile oils.

Varietal Recommendations

Beets: Ace, Bull’s Blood, Chiogga, Detroit Dark Red, Golden
Carrots: Bolero, Mokum, Sugarsnax, and any of the Nantes types, e.g., Scarlet Nantes. Although slower to mature than some of the more modern varieties, these heirlooms have a wonderful flavor.

Pests

Leaf miners can be a problem in beet crops grown on the Central Coast. Larva of this pest feed on the leaf surface cells, leaving semi-transparent brown patches.

—Martha Brown