



Forrest Cook

News & Notes of the UCSC Farm & Garden

Issue 161, Summer 2019

Plan Now and Plant Ahead for an Abundant Fall/Winter Garden

— by Orin Martin

In this mild Mediterranean climate here on the Central Coast our true summer tends to be August 15 through October. These months are characterized by the warmest air, soil, and ocean water temperatures. One of the bounties of our climate is that we can grow cool season crops alongside warm season crops and form a relay tandem as summer turns slowly to fall and then to winter. So, as our hallmark summer staples of peppers, eggplants, squash, tomatoes, and the like ramp up and peak, we would do well to conjure up images of the rolling golden hills turning verdant green, rushing streams, chanterelles lurking under oaks, nippy nights with logs dying in the fire, and sumptuous winter feasts.

Can you visualize images of the winter kitchen and fresh cut broccoli sauteed in a garlic sauce, celeriac au gratin to ring in the new year, a sumptuous rainbow of roasted roots, a solstitial Caesar's salad with Little Gem lettuces, a mountain of arugula dressed with balsamic and olive oil heaped atop home-made pizza (salad pizza!) and parsnips as the "piece de résistance" of that warming chicken soup? Well, all this and more can be yours if you plot, plan, and plant pronto. Don't delay, for—as the proverbial saying goes—"she or he who hesitates is lost..."

It is amazing, inevitable, and of course a bit sad to see how rapidly summer slips away. On August 1 we experience 14 hours of daylight. On September 21 we see 12 hours of daylight and 12 hours of darkness. Where does the time go? Moving toward fall, despite warm daytime temperatures, the sun seems to slink lower toward the horizon, the shadows grow longer, the afternoons fly by in the blink of an eye, the nights grow chilly; sweater weather.

With growing, in fact with all life on the planet, it's all about the sun—*fiat lux; let there be light*. Sunlight drives photosynthesis, the world's most important reaction. It gives us first, the food chain. And then, aided by organic growers like you, a transformative food system.

Plants take in CO₂ from the atmosphere. Plants also take up H₂O (water) from the soil. They use sunlight energy to break apart CO₂ and H₂O. They use the CO₂ and H₂O to make carbohydrates—mostly sugars. These carbohydrates provide energy and matter to form and grow the plant structure (root, shoot, leaf, flower, and fruit). As with all metabolic reactions, there are waste products. In this case, plants view the oxygen molecules (O₂) as a waste product and "kick it" back out into the atmosphere where it becomes the very air we breathe - lucky for us!

In fall and winter there are fewer hours of direct sunlight (the days are appreciably shorter), and that light is at a lesser intensity owing to the tilt of the earth as we spin madly through the solar system. Also cooler temperatures slow down the rate of plant growth. Thus the term fall/winter gardening refers to the time of harvest, not the time of initiation. As unlikely as it seems, late July to early September is the time to establish a firm foundation for the fall/winter garden. There is some great criticality in getting your crops sized up and well-established prior to the autumnal equinox. Then the plants will continue to grow, albeit slowly, and fruit, head up, mature well into winter. Successful direct sowings or transplants put out at two- to three-week intervals should provision for the kitchen "larder" well into the holiday season and beyond.

Some suggested timings:

Quick leaf crops-Arugula, spinach, cutting lettuce, salad mix, miscellaneous asian greens (as "babies") & **Quick root crops**-Radishes, turnips: These crops are best direct seeded. They will germinate quickly (the brassicas in 3-5 days, the spinach and lettuce in 7-9 days) and mature in 20 to 40 days. They will only hold in the ground

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for 10 to 15 days (at best). Thus, make successive sowings every 10 to 15 days. Timing: Late July-early October. Continued, later sowings are desirable, preferred, but oh so sketchy...

Slower leaf crops: Lettuces, kale, chard, radicchio, endive / escarole. Staggered sowings of lettuces, endive, and escarole every two to three weeks should suffice. With kale, chard, and radicchio, one transplanting in early August should carry you through Thanksgiving and even to the first of the year. A second stagger in mid to late September might provide good greens until early spring. At that point most overwintering crops are either cropped out or "crapped out" due to the weather.

Root crops: Carrots, beets, winter radishes (AKA German or Spanish radishes). Seed at three intervals in late July to early September. The first two sowings will mature in approximately 50 to 60 days. The last one will take 60 to 80 days.

The often unsung, underappreciated, but great root crops are indeed slow and steady; direct-seeded parsnips take 100 to 120 days. Transplanted celeriac 90 to 100 days. Put these crops in the ground in late August to mid September.

Peas: Succulent peas, be they the bush or climbing forms of snow, pod, or snap are generally ready to pick 50 to 70 days post-seeding. The bush forms crop 10 to 15 days earlier than the climbers, but climbers yield more over a longer time period. So, sow your peas in two waves: late August and early September.

Snow pea varieties usually fall into one of two categories: good tasting or high yielding. And so the story goes. But, for 30 years Johnny's 'Oregon Giant' has been the "leader in the clubhouse"; good production and a big tasty pod. The dilemma with pod peas is identical. This time Johnny's 'Maxigolt' is the solution.

Sugar snap, eat the whole thing peas: the original climbing 'Sugar Snap' has the best flavor and production, the main issues being mildew, stringiness, and you need a small orchard ladder to pick them (six to eight feet tall). The 'Improved Sugar Snap' (Johnny's) is mildew resistant, shorter (four feet) and just about as sweet. 'Cascadia' and 'Sugar Ann' are ok, in an ordinary sort of way.

Heading brassicas: Euro cabbages, asian cabbages (Napa) and pac choi, broccoli, cauliflower, romanesco "broc-a-flower" take eight to 12 weeks from transplanting. Two or three staggered plantings from late July to late September should provide until late winter.

Leeks: Leeks are intrepid, but slow. Transplants in July will crop in October to December and hold in the ground in good condition into March. Plant lots in July or August! Ninety to 100 days from planting qualifies as an "early-quick" leek, 120 days and more for the slower-maturing varieties, which tend to be richer in flavor. Scallions can be transplanted one time per month from July to October.

Lettuces (full size): 'Little Gem' romaines mature in 40 to 50 days, so successions of starts planted every two to three weeks from late July to mid October will do the trick. Butterhead lettuces take 50 to 65 days to head up; transplants should be set out every three weeks from late July to October. The speedy leaf lettuces (30-40 days) can be treated similarly. Full-sized romaines take forever. Or more precisely, 60 to 75 days—well worth the wait though. Perhaps two plantings, August and September.

Now for the "cast of characters" / varieties; OK, space only permits the leading actors...for a more complete list, johnnysseeds.com, seedsnsuch.com, or the Territorial fall / winter catalogue are great resources.

Most of these varieties are from the inestimable Renee Shepherd's Renee's Garden, Johnny's Selected Seeds, or Territorial Seeds. All are top notch purveyors.

Arugula: Johnny's 'Regular' is good enough for me; Renee's 'Runway' is deeply lobed and a little less pungent; Renee's 'Heirloom Rustic' is essentially wild Italian arugula and as such it is piquant with deeply indented dark leaves, but harder to cut; Territorial's 'Red Dragon' is lobed, red, and spicy!

Spinach: Renee's 'Baby Leaf Catalina' (smooth-leaf); Johnny's 'Gazelle' is best for winter (smooth-leaf); Territorial's 'Lakeside' tastes great, does well under adverse conditions.

A note on spinach: there are two basic leaf types—flat, smooth leaf and savoy (crinkled). Flat leaf types are more succulent and better as baby spinach. Savoy types are taller, bigger, darker, thicker, and more nutritious. Or, as I am wont to say, it's real spinach. Some outstanding fall/winter varieties include both 'Bloomsdale' and 'Bloomsdale Longstanding'. They overwinter.

In the "beyond category" arena are the old French heirlooms: 'Geant D'Hiver' and 'Monstreaux Virofly.' It ain't no lie—10 to 12 inch leaves that melt in your mouth. Note: these varieties are only for the short days of winter, as they are bolt prone in spring and summer.

Salad Mixes: Johnny's All Star Gourmet Mix and Wildfire and Encore mixes; Territorial's Mild and Tangy Mesclun Blend and Italian Saladini; Renee's Baby Mesclun lettuces.

Full-Size Lettuce: These days I'm a fool for little gem mini-romaines. The original variety 'Little Gem' that named the class is available from Territorial Seed Co. There are improved varieties, that is, improved size, color, form, ability to hold in the field but not flavor from Johnny's: 'Bambi'; 'Cegolaine' (about the only red variety worth growing); 'Newham'; 'Dragon.' But for me, I'm old school. Nothing beats the taste and texture of the intrepid, original, often imitated, never duplicated 'Little Gem'!

Radicchio: Despite recent breeding improvements, radicchio remains half wild, with a mind of its own. In the old days (circa 1980 and earlier) maybe 50-

Summer/Early Fall Calendar of Events

Gopher Control in the Home Garden and Small Farm

Sunday, July 14, 9:30 am – 12:30 pm

Cowell Ranch Hay Barn

Learn to control gophers, moles, and ground squirrels in the home garden, landscape, and small farm using non-toxic techniques focusing on exclusion and trapping. This workshop will be taught by Thomas Wittman, founder and owner of Gophers Limited and an expert on vertebrate pest control.

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 bit.ly/CASFSworkshops. For more information call 831.459-3240 or email casfs@ucsc.edu.

Foam Free Floral Design for Vases and Vessels

Sunday July 21, 9:30 am - 12:30 pm

Cowell Ranch Hay Barn

Create beautiful floral arrangements with flower growers and designers Caroline Martin of Wild Moon Flowers and Laura Vollset of Fieldsketch Farm in this design-focused workshop that will introduce the principles of floral design. Work on your own arrangements using organically grown flowers from the UCSC Farm & Garden. Cost of the workshop is \$70 general admission (pre-registered) / \$80 (at the door); \$60 / \$70 for Friends of the Farm & Garden; \$50 / \$60 for limited income and beginning farmers.

To pre-register online, see bit.ly/CASFSworkshops. For more information call 831.459-3240 or email casfs@ucsc.edu.

Docent-Led Tours of the UCSC Farm

Sundays, August 4, and September 1, 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.

For additional event information call 831.459-3240, email casfs@ucsc.edu, or see our web site, casfs.ucsc.edu.

*Sponsored by the UCSC Center for Agroecology & Sustainable Food Systems (CASFS),
and the Friends of the UCSC Farm & Garden.*

Sketching in the Garden workshop

Sunday, August 24, 9:30 am - 11:30 am

Alan Chadwick Garden at UCSC

We'll look at examples of how to create a successful sketchbook page composition. After an overview of materials, techniques, and a quick demo, we'll head out into the garden to draw! Instructor Tina Somers will be on hand to help guide our garden artists when needed with composition, technique, or direction.

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.

Garden Herbalism for Digestive and Respiratory Health

Sunday, September 8, 9:30 am - 12:00 pm

Cowell Ranch Hay Barn

Gardens and landscapes have great potential to nourish, strengthen, and treat the tissues of the respiratory and digestive systems. We will discuss herbal actions helpful for these tissues and meet/taste the herbs that have them. We will also discuss how to prepare and administer herbs from the garden for self care and treatment of common maladies of these organ systems.

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 bit.ly/CASFSworkshops. For more information call 831.459-3240 or email casfs@ucsc.edu.

Fall Harvest Festival at the Farm!

Sunday, September 29, 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.

Poetry & Music (and a silent auction!) at the Alan Chadwick Garden recap

The 2019 Poetry & Music event that took place on June 8 was a huge success thanks to our performers, donors, and volunteers!

The event featured poetry readings by Charles Atkinson, Danusha Laméris, Maggie Paul, Robert Pesich, David Robles, and Pireeni Sunaralingam and a musical performance by singer-songwriter Nick Gallant.

Twenty-two auction items were available to bid on thanks to the generosity of donors including: Patagonia, Bantam restaurant, Snap Taco, Dirty Girl Produce, Agile Monkey Pilates Studio, Santa Cruz Bee Company, Verve coffee roasters, local artists Jill Dion, Marti Somers, Beloved Bolton, and the Friends of the Farm & Garden board members. Over \$2,300 was raised from item bids!

Applications Open for 2019 Apprenticeship Program



Aspiring organic farmers and gardeners are invited to apply for the 2020 Apprenticeship in Ecological Horticulture at the University of California, Santa Cruz. The upcoming six-month program starts in April 2020. 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 15, 2019 for international applicants, and September 30, 2019 for U.S. residents.

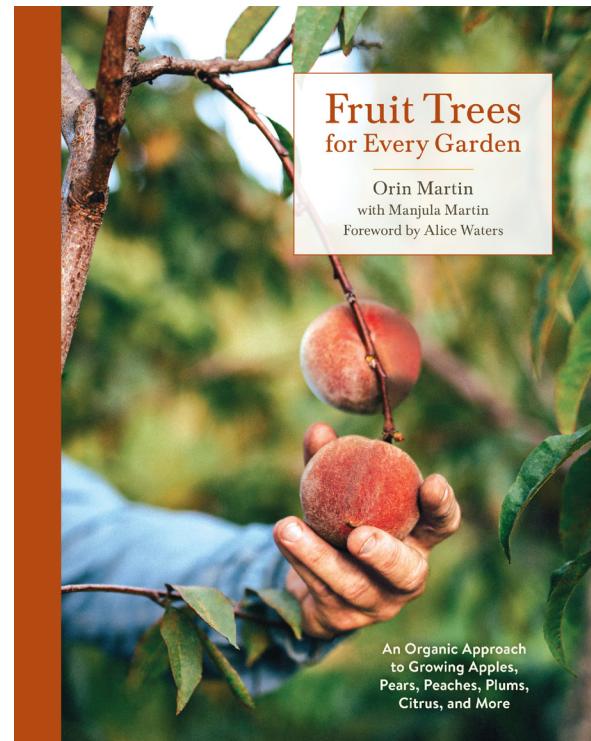
For more information about the Apprenticeship, please contact the Center for Agroecology & Sustainable Food Systems at 831.459-3240, or at casfs@ucsc.edu. Learn more about CASFS at casfs.ucsc.edu.

Fruit Trees for Every Garden by Orin Martin available for pre-order

For more than forty years, Orin Martin has taught thousands of apprentices, students, and home gardeners the art and craft of growing fruit trees organically. In *Fruit Trees for Every Garden: An Organic Approach to Growing Apples, Pears, Peaches, Plums, Citrus, and More*, Orin Martin shares—with hard-won wisdom and plenty of humor—his recommended fruit varieties and techniques for productive trees.

Whether you have one fruit tree or a hundred, Orin gives you all the tools you need, from tree selection and planting practices to seasonal feeding guidelines and in-depth pruning tutorials. Along the way, you'll gain a deeper understanding of the core principles of organic gardening and soil stewardship: compost, cultivation, cover crops, and increasing biodiversity for a healthier garden. This book is more than just a gardening manual; it's designed to help you understand the why behind the how, allowing you to apply these techniques to your own slice of paradise and make the best choices for your individual trees.

Filled with informative illustrations, full-color photography, and evocative intaglio etchings by artist Stephanie Martin, *Fruit Trees for Every Garden* is a striking, practical guide that will enable you to enjoy the great pleasure and beauty of raising homegrown, organic fruit for years to come. Pre-order your copy today at Bookshop Santa Cruz or online.



UC Cooperative Extension Hires First Organic Specialist

For the first time, the University of California has hired a Cooperative Extension specialist dedicated to organic agriculture.

Joji Muramoto, a longtime research associate with UC Santa Cruz, will coordinate a statewide program focused on the organic production of strawberries and vegetables.

Muramoto is highly regarded for the depth of his knowledge of soil science and for his pioneering contributions to the organic production of strawberries—a high-value crop notoriously vulnerable to pests and soil-borne disease. He will have a joint affiliation with UC's Cooperative Extension (CE) and the Environmental Studies Department and the Center for Agroecology and Sustainable Food Systems (CASFS) at UCSC.

CE specialists serve as liaisons between the university and the agricultural sector, building research programs that align with the needs of farmers and conducting collaborative on-farm studies that address problems growers are facing.

"I'm honored and humbled to have this position," said Muramoto, who plans to focus on soil fertility and the organic management of soil-borne diseases. In his position as assistant specialist, he looks forward to expanding his reach statewide and to coordinating short courses on organic pest management and organic soil fertility management.

CASFS Director Daniel Press said the establishment of an organic specialist is long overdue—and that Muramoto was an excellent choice.

"This is highly visible, public recognition of the significance of agroecology and organic agriculture," said Press. "It signals to the community of organic growers that we are a partner with them. They know this is for them, and they really love it."

UC Santa Cruz has played a vital role in the flourishing of organic farming on the Central Coast and beyond, through undergraduate education, training provided by the Apprenticeship in Ecological Horticulture, CASFS, and faculty research projects, many of which Muramoto supported as a research associate. Thirty percent of agriculture in Santa Cruz County is certified organic, said Press, who called the figure "astonishing."

"Joji is an exceptionally accomplished, skilled, talented, and respected scientist," said Press. "His list of publications is as long as many of my colleagues'. Now it's his show. He's the organic production specialist in the state."

It is also a sign of the times that UCSC was selected to partner with UC's Division of Agriculture and Natural Resources (ANR) to create this CE position, said Press. Despite its strength in agroecology, Santa Cruz is not one of UC's traditional "ag schools." But times are changing, and the Berkeley, Davis, and Riverside campuses are no

longer the only hosts of these valued positions.

"We have a long record of important ag research coming out of UC Santa Cruz, but it hasn't been part of a permanent program or a formal network," said Press, citing pathbreaking work by his colleagues in Environmental Studies, including Professor Emeritus Steve Gliessman, Professor Carol Shennan, former CASFS Director Patricia Allen, and former CASFS Associate Director Sean Swezey, all of whom Muramoto collaborated with. Most recently, in collaboration with Shennan, he helped pioneer the development of anaerobic soil disinfestation, a biological alternative to fumigants that has become a key strategy in conventional and organic strawberry production in coastal California.

In addition to campus support and ANR's commitment to provide ongoing funding for half of the position, grants from Gaia Fund, CCOF, and an anonymous donor will help support the position in its initial years.

Muramoto's commitment to organic agriculture is almost as old as he is. When he was a boy growing up in Tokyo, Muramoto lost his 6-year-old sister to leukemia. His parents were devastated. Their loss took place when many people in Japan were concerned about pesticide residues in produce, spurred in part by the emergence of the organic movement in Japan.

"My mother wanted to do something," recalled Muramoto. "There was no direct evidence between pesticide residue and cancer, but she didn't want her daughter's death to have been in vain, so she joined the early organic movement. She started buying organic produce via the 'Teikei' system, which is similar to Community Supported Agriculture."

During middle school, Muramoto spent school breaks on organic farms in suburban Tokyo. "Organic farmers there told me repeatedly, 'Soil is the foundation of farming,'" he said. "That's when I got interested in soil science."

Today there is much more evidence showing an association between pesticide use and cancer, and Muramoto

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Plant Now and Plan Ahead for a Fall/Winter Garden (from page 2)

60% of a stand of radicchio would head up. And at that it would mature over a two- to three-month period. Modern varieties have tamed this renegade, outlier crop without sacrificing taste and texture. Radicchio are grouped by shape: round, tall and sugar loaf. Pay attention to seasonality.

Some good fall/winter varieties: 'Leonardo' (Johnny's) uniform, dense, 4-5" diameter. Enhanced color heads are best for fall-winter; (Johnny's) The tall treviso type 'Fiero' is a striking dark maroon with contrasting white ribs and sure heading; 'Belfiore,' "beautiful flower," technically a variegato di lusia type has reddish pink spots on a white background, round-oval heads with a good radicchio bite; 'Sugarloaf' or 'Pan di Zuchero' is a romaine-sized, light green mild type. A "gateway" or white wine radicchio for beginners.

Carrots: Carrots, like brassicas, parsnips, beets, spinach, chard and even Brussels sprouts, are sweeter in fall/winter. The reason? With shortening days and colder temperatures the plants produce sugars which lower their freezing point and act as a natural life insurance policy or anti-freeze. Maybe a "survival of sweetest" evolutionary strategy. Definitely a gardener's dividend. What are the requisite criteria for a good fresh eating carrot? Sweetness-high carrot sugar, crunchiness/snap, juicy, and orange color. Sorry, white, yellow, and even that homage to Jimi Hendrix—"Purple Haze"—don't pass muster. If it's a carrot it's got to be orange, drop the mic.

The common classes of carrots are Nantes, Imperator, Chantenay, and round ones. Let's cut to the quick with no "Jimmy-Jackin" around: Grow Nantes types. They are 6-8" long and blunt-nosed. They resemble Groucho Marx's cigar shape and are oh-so-sweet.

(60-80 days) Fall/winter varieties: 'Bolero'; 'Mokum'; 'Nelson'; 'Ya Ya' (Johnny's); 'Merida'; 'Baltimore'; 'Romance'; Napa.

Post-script: Imperator types are long, impressive, and bland. Round types take 60 days for a ping pong ball-sized root.

Beets (50-70 days): Having grown beets for the better part of five decades, I'm still stuck on them being both round and "beet red." Is there a better beet than Red Ace? Words like: work horse, reliable, the standard, sweet and tender even when older, the highest quality come to mind. So while beets come in an array of colors, sizes, and shapes, the main issue is taste, or lack thereof.

'Moneta' and 'Zeppo' have fewer embryos per seed, so require less thinning. The beet seed is really a fruit, often with five to seven seeds in each. 'Touchstone Gold' and 'Boldor' are gold/yellow in color. And catalogue descriptions usually say things like light, mild taste, and sweet for a yellow beet, but...

'Chiogia' is an old Italian heirloom AKA the candy-stripe beet. Breeders are always professing new, improved strains, but the truth is – "all hat, no cattle."

Baby beets can indeed be beat—by a grownup beet.

Heading brassicas: Modern broccoli varieties offer short, compact plants with uniform dense, domed, tight heads. The taste and nutrition are as good or better than heirloom varieties. 'Gypsy', followed by 'Marathon' (Johnny's) are two of the best for this time of year. The issue for home gardeners is they tend to come on all at once and then be gone in seven to 10 days. I mean, how much broccoli quiche can you eat? A remedy is to grow some of the "throwback" varieties, like 'Waltham' and 'Decicco'. These and other heirlooms feature tall plants (3-4'), with small (3-4") central heads, but a profusion of smaller, sweeter side shoots over a one- to two-month period. The plants themselves are tougher (weather-wise) and need less fertility than modern hybrids.

Another broccoli variation would be what are now dubbed mini or floret broccolis. These derive from the old Chinese Gai-lon Lance broccolis.

Varieties abound: 'Gai Lon' (Kitasawa Seed co.); 'Happy Rich', 'Atlantis', and 'Burgundy' (Johnny's); 'Purple Sprouting', 'Apollo', 'Aspa Broc' (Territorial).

Cabbages: European cabbages - Two intriguing cabbage classes for home production are mini-headed varieties and savoy types. From Johnny's: 'Alcosa,' 'Caraflex,' 'Tiara,' and the red 'Omero' all feature small (2-3 pound), dense, compact, and oh-so-sweet heads. Renee's 'Pointy Headed Sweetheart' and 'Pixie' also excel. These varieties can be spaced as close as 6-10" apart. They grow and mature quickly, 60-80 days from transplanting and are so sweet and succulent they needn't be cooked. Simply shred them in the cuisinart, add Nantes carrots, a little sea salt and sesame oil, push the on button. Add walnut pieces to the serving bowl; it is a nutritious sublime slaw!

There is something about the look of a pointy-headed cabbage. Renee's 'Pointy-Headed Sweetheart' and Johnny's 'Caraflex' fit the bill. But the old 'Early Jersey Wakefield' heirloom is also yeoman-like, able to withstand the vagaries of winter weather.

And now Johnny's offers the striking (1.5-2 pound) 'Candy Red,' as well as the insanely big (7-8 pound) pointy headed kraut cabbage, 'Murdoc.' A big hit with the Bavarian, Weisskraut crowd.

Savoy cabbages feature interesting color variations and crinkled, wrinkled leaves that remain sweet throughout the winter months (no sulphur buildup). Johnny's 'Famosa' (75 days), deep blue-green leaves 'Deadon' (105 days), red savoyed leaves with light green interior coloring. Dense but sweet.

A closing note: In general and especially in the home garden varieties should be chosen for flavor. Sometimes this runs counter to high production, uniformity, or cosmetics. But as I often intone regarding apples: life is too short to eat lousy tasting apples. Good luck.

Apprenticeship Updates

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.

Katie Brimm (class of 2016) is a freelance writer based in Sebastopol, CA. She has worked in the food movement for over a decade in roles including researcher, writer, activist, and educator. She is also a no-till farmer and recently started a flower CSA at Singing Frogs Farm.

Rebecca Bozzelli (2007) established Lantern Farm in Cloverdale, CA in 2016. She received a Snail of Approval Farm award from Slow Food Sonoma County in recognition of her efforts to improve the local food system.

Hedda Brorstrom (2012) founded Full Bloom Flower Farm in Northern California in 2013. The intensive one-acre farm is entirely chemical-free and one of a small handful of no-till flower farms in the U.S. In 2014 she helped start The North Bay Flower Collective which has since been replicated in places like New York and Sacramento.

Scott Chang-Fleeman (2018) recently established Shao Shan Farm in West Marin. Scott grows organic Chinese heritage vegetables and hopes to create a market for organic Asian vegetables in the Bay Area. Scott was featured in a May 2019 article in the *San Francisco Chronicle*. In it, he discusses his time as an Apprentice at CASFS and how his connections there helped him establish his farm.

Seth Friedman (2006) is in his sixth season as Coordinator of the Practicum in Sustainable Agriculture at the University of British Columbia. The Practicum is a 6-month, part-time, experiential education program situated at the UBC Farm in Vancouver, BC. Seth's role involves teaching, facilitation, and administration. In addition to overseeing the 550-hour Practicum program, Seth coordinates over 50 public workshops per year. For more information about the UBC Farm, please visit: ubcfarm.ubc.ca.

Joseph Johnson (2016) is working to create a community garden in his Philadelphia neighborhood. Planning is underway and funding and volunteers are being sought to see the project through. Joseph and the community garden are featured in a June 2019 online *Philadelphia Neighborhoods* article: philadelphianeighborhoods.com/2019/06/03/east-mt-airy-neighbors-work-together-to-get-community-garden-off-the-ground.

Keep Up with Farm & Garden News!

Keep up with the latest news from CASFS/UCSC Farm & Garden by following us on social media. Twitter: @UCSC_CASFS; Instagram: @ucscfarm; Facebook: Center for Agroecology & Sustainable Food Systems.

Check out casfs.ucsc.edu for updates, information, and resources. If you're not on our email list, drop a note to casfs@ucsc.edu and let us know you'd like to be added.

casfs.ucsc.edu/2019/06/03/east-mt-airy-neighbors-work-together-to-get-community-garden-off-the-ground

Joanna Letz (2011) founded Bluma Flower Farm in Sunol, CA in 2015. Recently, she began growing flowers on the roof of a downtown Berkeley apartment building in addition to her field in Sunol. In a June 2019 *Berkeleyside* article, she discusses the challenges and opportunities of growing flowers, as well as how she became interested in farming.

Brandon Pugh (2004) founded Delta Sol Farm, the only organically certified farm in eastern Arkansas, in 2009. Delta Sol provides flowers for events and weddings. Through Butch Flowers, the official umbrella for Delta Sol flowers, Brandon is embracing the Queer Farm movement. He and his farming operation are featured in an online story in *Edible Memphis*.

Karen Washington (2008) is an advocate for justice in the food system. She has been involved with many food justice organizations including Just Food, Farm School NYC, NYC Community Gardens Coalition, as well as Black Urban Growers, which she co-founded. She currently owns and operates Rise & Root Farm. She was included in *Foodtank's* list of 14 African American Women Leading Change in the U.S. Food System earlier this year.

A note from Herb Machelder (2007): "An excellent harvest season from our Urban and School orchards: Apricots ready for harvesting, early Peaches picked at full color finish ripening. Our MG Workshops stressing fundamentals from CASFS and UCANR are finally proving their worth. We adapt to the unique urban environment, with integrity but not orthodoxy, while showing respect for all who grow. This has enabled us to be a part of our ecosystem; neither dominating, nor capitulating to its challenges. Sustainability practiced as a methodical, integrative and incremental process rather than an elusive goal. Robust summer and winter pruning, grafting a new compact "pedestrian" orchard, urban fruit trees flourish in spite of only treasured space, limited resources and folks more accustomed to street curbs and stoops than orchard ladders. Kudos to Master Gardeners of our Orchard Team, who teach with patience, dedication, and respect for the communities where we work. This is a strong fabric of civic life."

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***UC Cooperative Extension hires first organic specialist
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said, "It is important to increase our efforts to develop agroecological practices to manage pests without using pesticides."

As a young assistant professor studying soil science at an agricultural university in Japan, Muramoto found it difficult to get support for the work he wanted to do on organic production—while others in his department were well-supported for their work on conventional farming practices, including studies on chemical pesticides. The stress took a toll on Muramoto's health, and he left the university.

He reached out to Steve Gliessman after reading an academic article about Gliessman's early work on organic strawberries. Muramoto visited Gliessman in 1995 and joined Gliessman's agroecology lab at UCSC as a visiting scholar the following year. "I am so thankful, because he gave me the second chance I needed," said Muramoto. "I ended up working on organic strawberries ever since."

Muramoto hopes to develop ways to measure indicators of soil health, including levels of readily decomposable organic carbon and nitrogen. "Soil health has become a mainstream research topic among soil scientists worldwide, but there's no regional data for the Central Coast," he said.

Jim Cochran, founder of Swanton Berry Farm in Davenport, met Muramoto shortly after he arrived in Santa Cruz. Cochran was the first farmer to grow organic strawberries commercially, a success he credits to his collaboration with CASFS researchers.

"I'm an intuitive farmer, but intuition isn't everything," said Cochran, who values the curiosity and scientific discipline Muramoto brought to their collaboration. "Science is super important. You don't want to live by one or the other."

Soil biology is extraordinarily complex, said Cochran. "There's no magic bullet, but Joji was ready to put a close scientific eye on the complexity of it," he said. "Joji embraced that complexity."

Muramoto takes a "holistic approach" to soil science and has kept his eyes on the larger picture, said Cochran. "He's been able to make some serious progress understanding soil biology, but there's a long way to go—which is good news for graduate students." he said.

Rod Koda of Shinta Kawahara Family Farms has grown strawberries in Watsonville since 1984. He farms 10 acres conventionally and seven acres organically, and he said "it's time" for organic to get the support it deserves. But all growers can benefit from paying close attention to soil health, he said.

"Conventional growers, we don't have fumigants like methyl bromide anymore, so we've got to get smarter about how we farm," said Koda. "Joji is going to be a part of that."

Koda first started growing berries organically in 2006. "I eased into it, drawn by the sustainability of organic," he said, adding that organic alternatives to managing pests and controlling soil-borne disease were key to his willingness to make the leap. Muramoto focus on maximizing soil health and using the functions of soil bacteria and organisms to suppress soil fungal diseases was eye-opening.

"I've learned a lot from Joji over the years," said Koda. "He's going to be the conduit that will bring that knowledge to other people—not just strawberry growers, and not just organic growers. Anyone who pays attention will glean some information from his work and his collaborations with other researchers."

-Jennifer McNulty