



# News & Notes of the UCSC Farm & Garden

Issue 144, Winter 2015

*For the Home Orchardist*

## Home Grown: Musings from the Citrus Terraces

– *Orin Martin*

There are not many climates worldwide that allow the growing of citrus (an evergreen fruit) within “spittin’ distance” of apples (a deciduous fruit). Ours is one. Central coastal California, from the salt-spray zones along West Cliff Drive in Santa Cruz to the Upper Marine Terraces (800’–1000’ elevation) at UC Santa Cruz and beyond, have the shared climate characteristics of the world’s five Mediterranean climates.

California, central Chile, south and southwestern Australia, the western cape of South Africa, and of course, the Mediterranean basin cumulatively comprise the 2% of the world’s landmass with a climate classified as Mediterranean. Such climates feature –

- Dry summers: Some foggy and cool as is ours, some with moderate temperatures (average < 72°F) such as Santa Barbara and Santa Rosa, and some hot, e.g., L.A., Stockton, Sacramento (average > 75°F)
- Rainfall: Concentrated in the winter months, and variable as per the annual amount (as we are increasingly well aware), e.g.—

1998: 82” of rainfall at the Chadwick garden, UC Santa Cruz (800’ elevation)

2014: 19” of rainfall at the Chadwick Garden

Lately, it seems our weather is nothing if not erratic. The precipitation comes in periodic pulses, often in low pressure systems of 3–5 days duration, and often punctuated with episodes of both light/moderate rain to bouts of almost monsoonal downpours. These weather systems move in alternatively out of the Gulf of Alaska with associated colder temperatures and moderate rainfall totals, or sweep up from the Hawaiian archipelago, often with excessively wet inundations. The pause between weather systems gives rise to “why we live in Santa Cruz weather”: clear, crisp, sunny days and correspondingly clear starry nights, and often with majestic, if somewhat threatening cumulo nimbus clouds skirting Mt. Loma Prieta and sliding off to the south.

We truly have a mild-ambient climate. It is a strong selling point for living here. But as is so often the case, our strengths are our weaknesses. Or as Tom Waits once intoned with his trademark growl, “What the big print giveth, the small print taketh away.”

Yeah, we catch a break from the interior’s summertime temperatures, consistently in the 90’s and more than occasionally topping the century mark (the big print). But, as climate—in this case our cool Mediterranean climate—has a profound effect on plant growth, the performance of warm-season, heat-loving crops can be a bit pedestrian, both lagging and lacking (the small print).

In the case of citrus, heat and its subtropical humidity yield not only higher sugar levels, but higher sugar:acid ratios that, in turn, make citrus not just sweeter and juicier (as if that’s not enough), but impart an overall richer, full flavor and bigger, more spherical fruit.

So, the big print says: Santa Cruz and environs are “comfortable” places to dwell and garden. But, the small print reminds us that sugar/sweetness in citrus can be problematic. Some suggested strategies for Central Coast citrus gardeners –

- Microclimates
- Varietal choices

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### Siting Citrus

Realistically, you live in one climate, and yet there are often many microclimates on your property. Where you position your citrus is important.

**Sunlight:** Citrus needs a minimum of 10 hours of direct sunlight year round. More is better. Sunlight drives photosynthesis, arguably the most important reaction on the planet. It gives us the food chain, which in conjunction with fertile soil, organic matter, and trained growers, gives us the food system.

**Wind:** While wind can lessen the incidence of frost on cold nights, it is also tough on plant growth. It causes rapid water loss from both plants and the soil. And as a response to being constantly buffeted by winds, plants often thicken their leaves and stems/branches at the expense of extending shoot growth. Wind-free sites often have warmer spring and summer temperatures.

**Aspect** (compass direction of a slope—south, east, west, north): The top of a gently south-facing slope trumps all. Regarding the interactions of sun, heat, cold, and drainage: south slopes receive more direct sunlight\* than north-, east-, or west-facing slopes, and even more than flat ground. Planting at the top of a gently south-facing slope and avoiding low spots will reduce the risk of frost damage. Remember that like water, cold air seeks its own level. It is heavier than warm air and will flow/sink to low-lying areas, creating “frost pockets.”

Planting against the south side of a building or wall can help boost the microclimate for citrus. The wall absorbs daytime heat and reradiates it slowly at night, warming the immediate microclimate. Light-colored surfaces reflect more heat and light during the day. Dark-colored surfaces absorb heat and light, and slowly release heat during the night.

Raised beds with good soil structure and high organic matter (OM) content warm more quickly after a winter rainstorm and similarly in the spring. Soils high in OM are also darker in color, and absorb and hold more heat.

### Varietal Strategies for the Santa Cruz Region

Note, this information is based on almost four decades of direct observation and thought. At the present time, it has neither been proved nor refuted by scientific research—a disclaimer, of sorts.

### Sweet Citrus

The closer the proximity to the coast, the more difficult it will be to set truly (drippin’ with sugar) sweet fruit. And yet...

*Citrus reticulata* (Mandarins and Tangerines)\*\* – Mandarins/tangerines are very cold hardy, tolerating temperatures down into the low 20°Fs before frost damage

\*Direct Sunlight – in the mid latitudes of the northern hemisphere, south-facing slopes are warmer because the sun strikes the ground at a more direct angle, leading to a higher intensity of the heat energy received at the surface.

starts. The issue is that not all (or even many) varieties will develop good sugar on the coast. Here are some that are reliable in that regard.

**Encore Mandarin** – If I were restricted to only one citrus variety, this would probably be the one. Its virtues and merits far outweigh its demerits. It is one of the few summer-ripe citrus. Because of its historically late maturation and long “hang-time,” its sugar development is “beyond category.” The tree grows vigorously, yet tops out at 7–9’ on dwarfing rootstock in fertile soils. It is a heavy yielder, 200–300 fruit on an 8’ x 8’ mature tree. Yes, it’s sweet and often a virtual “juice bomb,” but what seals the deal is its aromatic/oily aspect.

The harvest season is extremely long. While a few passable fruits can be “pinched” in June, sugar development begs waiting until July to begin harvesting. Fruit can hang on the tree until December without deterioration. I like to leave a few unharvested and on New Year’s Eve at sunset, ascend a ladder and pick and eat from on high; a good way to finish off the year.

OK – now for the demerits:

The skin develops green/brown spots. While this limits its commercial viability it is merely cosmetic. Don’t let it deter you. The rind (peel, skin) is moderately adherent, but still easily peelable. Encore, like most mandarins, is seriously alternate bearing—a heavy crop one year, and an often-light crop the next. There are no cultural remedies for this malaise, it’s genetic.

**Owari Satsuma Mandarin** – This mandarin is the earliest ripening sweet citrus I know of. It often commences at Thanksgiving and is in full swing by Christmas. Eat them quickly (shouldn’t be a problem) as they only keep their quality on the tree for 4–5 weeks. The tree is a natural dwarf with a weeping form:

- On the (Cuban/Shaddock) true dwarfing rootstock – a mere 3–4’, a suitable candidate for a ½ wine barrel.
- On semi-dwarfing (trifoliate) rootstock, 5–6’
- On standard rootstock (recommended choice) 6–8’

Owari is the classic slip-skin/zipper-skin citrus—a favorite with the kids in the crowd as it is easy to peel. It is seedless, sections easily, and brings a mildly acidic sweetness that is sprightly; it has a zingy vitality. The skins can be boiled and sugared, dried and kept indefinitely. The juice content is moderate. It is both “tried and true” down to the coastal strand.

**Clementine/Algerian Tangerine** – This variety was introduced as a seedling found and bred by French monk Clement Rodier. Recently, along with the Murcott Tangerine, it comprises highly successful branding—you may

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\*\*Generally if a variety of *Citrus reticulata* came to the attention of southern Europeans by way of China, it is referred to as a mandarin orange. If it was shipped from North Africa out of the port of Tangier, it’s a tangerine.

# Winter/early Spring Calendar

## Home Grown: Citrus Selection, Planting, and Care

Saturday, February 28, 9:30 am – 1 pm

Louise Cain Gatehouse, UCSC Farm

Add some zest to your garden or small-scale farm with citrus. Join Daniel Paduano of Abounding Harvest Mountain Farm and Orin Martin of the Chadwick Garden to learn about citrus varieties (lemons, limes, tangerines, oranges, and more) that perform well in the Monterey Bay region, and how to select a site, plant, and care for a range of citrus trees. The workshop includes a tasting of citrus varieties.

*Pre-registration costs:* \$55 general public; \$45 Friends of the UCSC Farm and Garden; \$30 students/limited income. *Register online or by check; details at:* [tinyurl.com/workshops2015](http://tinyurl.com/workshops2015)

*At the door:* \$65 general; \$55 Friends; \$40 students/limited income (cash or check only).

## Gopher Control for the Home Garden or Small Farm

Saturday, March 7, 9:30 am – 12:30 pm

Louise Cain Gatehouse, UCSC Farm

Thomas Wittman of Gophers Ltd. presents a workshop on non-toxic methods of controlling gophers and other vertebrate garden pests. Learn how to identify pests and how to use exclusion and trapping options to protect your garden and landscape.

*Pre-registration costs:* \$30 general public; \$20 Friends of the UCSC Farm and Garden; \$15 limited income, \$5 students. *Register online or by check; details at:* [tinyurl.com/workshops2015](http://tinyurl.com/workshops2015)

*At the door:* \$40 general; \$30 Friends; \$25 limited income; \$5 students (cash or check only).

*If you'd like more information about these and other upcoming events, need directions, or have questions about access, please call 831.459-3240, email [casfs@ucsc.edu](mailto:casfs@ucsc.edu), or see our web site, [casfs.ucsc.edu](http://casfs.ucsc.edu).*

*For more 2015 events, see Upcoming Events at [casfs.ucsc.edu](http://casfs.ucsc.edu).*

*Co-sponsored by the Center for Agroecology & Sustainable Food Systems at UC Santa Cruz, and the Friends of the UCSC Farm & Garden*

## All About Berries: Blueberries & Cane Fruit for the Home Garden and Small Farm

Saturday, April 4, 9:30 am – 12:30 pm

Louise Cain Gatehouse, UCSC Farm

Join Matthew Sutton, owner of Orchard Keepers, to learn how to add blueberries and cane fruit to your home garden or small farm operation. Matthew will take you through the steps of choosing the right variety and planting site, as well as the basics of planting and caring for blueberries, blackberries, raspberries, etc. By the workshop's end you'll be fluent in fruticanes and primocanes.

*Pre-registration costs:* \$30 general public; \$20 Friends of the UCSC Farm and Garden; \$15 limited income, \$5 students. *Register online or by check; details at:* [tinyurl.com/workshops2015](http://tinyurl.com/workshops2015)

*At the door:* \$40 general; \$30 Friends; \$25 limited income; \$5 students (cash or check only).

## First Sunday Farm Tour

Sunday, April 5, 2:00 pm

Louise Cain Gatehouse, UCSC Farm

The first monthly free guided tour of the 2015 season takes place on Sunday, April 5. Join a docent for a walking tour of the 30-acre organic UCSC Farm and learn about the many research, education, and outreach activities taking place on this campus landmark.

No reservations necessary; free parking available at the corner of Coolidge Drive and Carriage House Road, just inside the main entrance of the UCSC campus.

*Stay Tuned!*

*Hay Barn "Barn Raising" Event on Tap*

The Cowell Ranch Hay Barn at the base of the UC Santa Cruz campus is being rebuilt as the new headquarters for the Center for Agroecology & Sustainable Food Systems and other south campus programs, and the new entrance to the UCSC Farm.

Later this winter we'll celebrate the raising of the barn walls, and hope you can join us—once the date and time are finalized we'll announce the details on the CASFS website ([casfs.ucsc.edu](http://casfs.ucsc.edu)), Facebook page, and via other media. Or contact us at [casfs@ucsc.edu](mailto:casfs@ucsc.edu), 831.459-3240 for more information.



### Tribute to a Founding Friend of the Farm & Garden

Bess Blodgett helped found the Friends of the Farm & Garden not long after Alan Chadwick's 1971 arrival on the UC Santa Cruz campus and the early days of the Student Garden (now the Chadwick Garden) and UCSC Farm projects. Bess passed away in Santa Cruz on November 1, 2014, just a few days after her 104th birthday.

Chadwick Garden manager Orin Martin recounts, "How well I remember Bess, truly an amazing woman—and always a twinkle in her eye. When she spoke with you, you had the feeling that you were the only person in the world. Her contribution to the Friends of the Farm & Garden board and by extension to the Apprentice program, was considerable. She and her Friends' Board cohort—the likes of Louise Cain, Phyllis Norris, Jerry Walters, Eva Fosselius, Gerry Bowden et. al.—truly sustained the Farm and Garden in the early years."

Bess's family asks that any remembrance contributions be sent to Hospice of Santa Cruz or the Friends of the UCSC Farm & Garden. Contact us at 831.459-3240 or [casfs@ucsc.edu](mailto:casfs@ucsc.edu) for more information.

### CSA Memberships for 2015 Are Now Available

Memberships in the UCSC Farm's 2015 Community Supported Agriculture (CSA) project are now available. Our planned start date is Tuesday, June 2, with the full CSA season (22 weeks) extending through Friday, October 30, weather permitting. This year we're again offering a half-season option, with the "late-season share" starting on Tuesday, August 18 and running through October 30.

Along with an array of seasonal, fresh-picked produce, members also receive a weekly CSA newsletter with recipes and farm updates, and a complimentary membership to the Friends of the Farm & Garden for the duration of the CSA season.

Cost of a share for the full 2015 season is \$560; a late (half) season share is \$280. Payment plans and low-income shares are available. The CSA also accepts SNAP benefits.

For more information or to receive a CSA brochure, call 831.459-3240 or email [farmcsa@ucsc.edu](mailto:farmcsa@ucsc.edu). Or go to [casfs.ucsc.edu](http://casfs.ucsc.edu); on the lower part of the home page, find out more about the CSA at the *Produce and Plant Sales* link, and find a link to the *CSA Pledge Form* under Quick Links.

### Annual Meeting of the Friends of the Farm & Garden

Turnout was high at this year's Friends of the Farm and Garden Annual meeting, held at Ristorante Avanti on November 6. The evening began with food, music and mingling, followed by electing our new board of directors. Roughly 40 attendees voted unanimously in favor of Co-presidents Cristina McCutcheon and Monica Larenas, Vice President Kurt Christiansen, Secretary Robin Somers, and Treasurer Kevin Bell. Second-year Apprentice liaison Dan Tebes recounted his experiences in the Apprenticeship Program and expressed his gratitude for Friends' support. He leaves the Farm headed for farming projects and graduate school.

Members listened to highlights of this year's Friends' accomplishments and goals for the year ahead. This year, the Friends of the UCSC Farm & Garden:

- launched the Business Associate program
- reached record-high membership and revenues
- supported the bi-lingual (Spanish and English) Core Gardening Series.

Goals for the coming year:

- strengthen ties to the broader community
- grow the membership
- hold a film and speaker series
- help with the Hay Barn restoration
- invest \$10,000 for infrastructure needs
- fund new plant stock purchases to diversify offerings at the plant sales

Dr. Daniel Press, Executive Director of the Center for Agroecology & Sustainable Food Systems (CASFS), marked the final of many high points that evening when he delivered an informal address to the attendees, following by a Q & A.

"Daniel's leadership inspired all of us that evening," said Friends of the Farm & Garden Vice President Kurt Christiansen. "He built the relationship between the community, CASFS, and friends."

We on the board and staff of the Friends of the Farm & Garden extend our gratitude to all of our Friends' members for their commitment and interest during this last year.

A special thank you to Ristorante Avanti co-owners Cindy and Paul Geise for hosting such a successful event.

## New Grants Fund Research, Education, & Operations

It was a busy grant and gift season this fall and winter, adding up to some exciting new support and generously-renewed funding for the Center for Agroecology & Sustainable Food Systems (CASFS) and the Farm & Garden. Here we highlight the top grants and gifts, and we want to extend our gratitude to everyone who has provided support over the past year through their donations and in-kind gifts.

CASFS received two multi-year grants from the California Department of Food and Agriculture (CDFA) Specialty Crop Block Grant program for two new projects:

### *“Specialty Crop Farmer Training and Toolkit for a Sustainable Future” — \$287,079*

This new project will produce eight Grower Guides in English and Spanish on specific crops grown using organic and sustainable production practices. These crops will be demonstrated at the Farm & Garden, with distinct blocks of mixed vegetables and cut flowers providing data for publications covering varietal choices, production practices, and economic analysis. Specialty crop classes, workshops, and mentoring sessions using these materials and demonstration blocks will be delivered to over 250 new and beginning small-scale farmers during the project.

### *“Improving Nutrition and Increasing California Specialty Crop Sales: Implementing Collective Buying in K-12” — \$286,654*

This project will increase nutritional intake and the percentage of California fresh fruits and vegetables purchased and consumed through K-12 institutional markets in Monterey, San Benito, and Santa Cruz Counties, as well as statewide. The project will work with Food Service Directors from fifteen school districts to identify and implement collective buying strategies of California fresh fruits and vegetables to reduce costs that can then be re-invested in specialty crop procurement.

This year also came with some wonderful surprises and support from past donors and new donors. Two foundations that have previously supported CASFS were inspired to give new grants this year at higher levels than even requested.

The Clarence E. Heller Charitable Foundation granted \$100,000 for the CASFS project entitled “Agroecology and Sustainable Food Systems Curricular Integration and Enhancement at UCSC.” The Heller Founda-

tion increased its support from \$75,000 to \$100,000 this year to aid CASFS in its work on sustainable agriculture curriculum, courses, internships, and training for undergraduate students, with integration of courses and activities at the CASFS Farm and the Chadwick Garden. The Eucalyptus Foundation also awarded \$75,000 as a second year of funding to support Apprenticeship and undergraduate education at the Farm & Garden.

The True North Foundation awarded a grant of \$50,000 for “Sustainable and Organic Agriculture Education and Training at UCSC CASFS.” This grant was also increased from \$40,000 to \$50,000 this year as the True North Foundation continued its funding of the Community Supported Agriculture (CSA) training while increasing its support for the undergraduate education work being integrated at CASFS.

The UNFI Foundation has granted \$15,000 in “general support” to CASFS, much-appreciated support that can be used to fund staff salaries and other essential operating costs.

The Hirshberg Family Fund of the New Hampshire Charitable Foundation donated \$15,000, at the request of Meg Cadoux Hirshberg (1978 apprentice), for the CASFS instructional video project (described in the Fall 2014 *News & Notes*).

The AgaDino Foundation has granted \$8,306 to support scholarships in the Apprenticeship training program, with the intent of aiding international apprentices in the program. This grant, an increase over their past annual contributions, will help support two apprentices in the 2015 program.



*Generous support from the Stocker Family Fund of the Community Foundation of Santa Cruz County is making it possible for the Farm to expand production efforts onto a new field along Hagar Drive, dubbed the “Quarry Field” thanks to its proximity to the Lower Quarry. Farm site and research lands manager Darryl Wong is preparing the field for planting and fencing. Look for more information on this exciting effort in the next issue of the News & Notes.*

*Citrus, from page 2*

know them as “Cuties.” The two varieties look and taste alike, and serve to extend the harvest season for this seriously trending product.

Clementines are intermediate between Owari and Encore in terms of vigor. The tree form is round-mounded, the foliage is a dark green, and as the fruit is held out towards the periphery, it makes an outstanding landscape tree. The season of ripening is on the heels of Owari in February–April. It is seedless (as a rule) and produces heavier crops with a pollinator: Dancy, Minneola tangelo, or Kinnow. And while it prefers inland, even desert heat (consider its North African roots) it does passably well in downtown Santa Cruz. It comes across as a relatively easy to peel, pretty sweet, very juicy, small but beautiful fruit.

My citrus mentor, friend, and Apprenticeship alum Daniel Paduano of Abounding Harvest Mountain Farm in the Santa Cruz Mountains also recommends the tangerines **Tango** and the new (UC Riverside) patented varieties **Shasta Gold**, **Yosemite Gold**, and **Gold Nugget**—if it’s good enough for Daniel, it’s good enough for you and me. And don’t miss the chance to learn directly from Daniel about choosing and growing citrus when we team up to teach the “Home Grown” workshop on February 28 (see page 3 for details).

**Sweet Oranges**

**Skagg’s Bonanza** is the “leader in the clubhouse” for a Santa Cruz sweet navel. The tree is more compact/dwarf, but the fruit is larger and despite the thick, bumpy rind, both sweeter and juicier than the standard Washington navel. Its season of ripening often begins early—sometimes January, definitely by February.

**Blood Oranges**

I have mixed feelings about recommending blood oranges. They are indeed unique, attractive, and tasty. Ah, the taste—now, “there’s the rub...” The taste is not that of a sweet orange. It’s not supposed to be; it is a bit musky, not unlike the flavor of raspberries. It’s certainly distinctive in its aromatic properties—a connoisseur’s citrus, if that’s not too “boug-zee” (slang for bourgeois) for you.

**Tarocco** needs more heat than we get in Santa Cruz, but both **Moro** and **Sanguinelli** are at least passable, sometimes downright righteous. Sanguinelli features small to medium, slightly oblong fruits with a red-blushed rind and red-streaked flesh. Moro fruits in clusters, yet the fruit is slightly larger than Sanguinelli. It is juicy with a distinctive aroma. With all blood oranges, coloring of both the rind and flesh is variable—and on the coast, variable, weak, and even erratic or unreliable. And while Moro is earlier ripening than Sanguinelli, I wouldn’t even think of harvesting either before late April–mid May. They say patience is a virtue and good “hang time” allows both sugar and aroma to express themselves.

As per planting on the coast: I would. Why not go out on a limb—after all, isn’t that where the fruit is?

**A Note on Citrus Fertility**

As citrus are evergreen, they grow continuously throughout the year, assuming soil temperatures are above 50°F. And as citrus often exhibit many phases of function (root and shoot growth, flowering, immature and mature fruit growth) simultaneously, they require frequent fertility inputs in quantity.

A suggested prescription for citrus fertilization: Every 4–6 weeks starting when new leaves appear in the spring, running through August –

- Skim weeds from trunk to out beyond the dripline
- Apply compost\* over the skimmed area. With young trees, use 1–2 shovels full; with established trees, apply ½–2/3 of a 5 cubic-foot wheelbarrow
- Work the compost into the soil surface 3–4” deep with a tilthing fork
- Apply a concentrated, granular, OMRI-approved\*\* high nitrogen fertilizer, >7%N.

Options include:

- Blood meal, 12%N
- Sustane, 8-2-4
- Fish meal, 7–10%N
- Soy meal, 7–10%N
- California Fertilizer, Avo-Citrus Mix, 8-5-4
- Dr. Earth (although organic, it is not certified as such; one advantage is that it includes microbial inoculation that “seeds” the soil with beneficial bacteria, fungi, and actinomycetes)

Irrigate to activate dry fertilizers. This should prevent any chronic problems.

If your citrus have acute problems due to low fertility, here’s a possible prescription:

Mix 12 oz. Alaska fish emulsion (OMRI-approved) and 2 oz. liquid kelp in 5 gallons of water and apply it evenly to root zone of tree. Follow with light watering.

\*The old quip re: compost: “The good thing about compost is that it is slow acting; the bad thing about compost is that it is slow acting.” That is, compost alone, because of both amount of nutrients and their speed of availability, is not sufficient to meet all the demands of citrus. Even well-made compost only has a N content of 0.5–1%, but is teeming with beneficial microbes.

\*\*OMRI = Organic Materials Review Institute, an independent program that evaluates materials for approval as certified organic inputs. See more at [www.omri.org](http://www.omri.org).

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### Minneola Tangelo

A hybrid cross between *Citrus reticulata* (mandarin) and *Citrus paradisi* (grapefruit) with the mandarin predominating. It is a small tree (4–5' on dwarf rootstock, 6–8' on semidwarf) with large bottleneck-shaped, easy to peel fruit. The rind (epicarp) is a deep red-orange—a thing of beauty. As for taste, it has a firm texture and a tart (grapefruit parentage) semi-sweet tang to it. It also has a distinctive, aromatic aftertaste. The season of ripening is February–March.

### Limes

The quest for a lime that performs well on the coast goes on. Short of moving to say, Havana, New Orleans, or Maracaibo, try the following:

**Taveres Limequat** – Distinctive, small, oblong yellow fruit that are as good as a Mexican lime in margaritas. The tree is allegedly a dwarf (mine now runs to 12'—on dwarf rootstock!) and is perpetually loaded with fruit. The fruit can also be cut in half, boiled for 15 minutes in a simple syrup, and then dried in a food dehydrator, and is a divine blend of sweet/tart. But in the end, any lime or lemon is simply best squeezed into a tall glass of ice water.

**Bearss Lime** (*Citrus latifolia*) – While not a true lime, the Bearss is an outstanding specimen. The full, round-headed tree with dark green foliage can serve as a focal point in any landscape. It is a heavy and regular bearer, with fruit from October–April. Used green, it's more lime-like; at maturation (yellow) it is more lemon-y. But in truth it is unique—not a lemon, not a lime. Its juice and aroma are unsurpassed, and I find it superior to either a lemon or a lime.

### Other Sure to Reasonable Bets for the Santa Cruz Area

**Valencia Orange** – The most prominent commercial orange in the world, accounting for >50% of Florida's orange crop. This is the quintessential juicing orange, although cut into wedges and eaten out of hand it is sweet, refreshing, and certainly juicy. While Valencias don't peel as easily as Navels, both sugar/acid ratio and amount of juice is greater. Valencia is a late-ripening variety, from spring into early summer. As such it benefits from a long "hang time" on the tree. Not only does fruit not deteriorate, it continues to get sweeter. Sometimes if left on the tree into summer, the fruit will manufacture chlorophyll and re-green. This is not really a problem as it is also an indicator of increasing sugar. I like to leave them on the tree until June, even July.

### Lemons, *Citrus limon*

Lemons have the lowest heat index of any citrus. As such they are grown commercially in coastal areas. They are, however, among the most cold-sensitive of citrus, and can be killed if temperatures drop to 28–30°F or below (but see Meyer lemons, below).

One big advantage of lemons is that they often have at least some fruit on them year round. Again, the backyard/back door grower has the dual advantages of pick-



Graduates of the 6-month and advanced Apprenticeship training programs at UCSC's Farm & Garden are making their mark both near and far as they manage farms, work for food justice programs, and expand campus farming efforts. Here's an update on what some of the Apprenticeship graduates are doing with their training; you can see more examples at [www.growafarmer.org](http://www.growafarmer.org)

After several seasons of farming on the East coast, **Kasey Butler**, a 2011 graduate of the Apprenticeship, will be running the flower operation at Blue House Farm in Pescadero, California starting in the 2015 season. Also returning to California from the East coast is **Mary Hillemeier** (2012), who will be working as Blue House's harvest manager. Blue House is owned by **Ryan Casey**, a graduate of the 2001 Apprenticeship. Read more about the farm at [www.bluehouseorganicfarm.com](http://www.bluehouseorganicfarm.com).

**Vanya Goldberg** (2008) is now working with the Agricultural Justice Project ([agriculturaljusticeproject.org](http://agriculturaljusticeproject.org)), which has developed the "Food Justice Certified" label based on high-bar social justice standards for farms, processors, and retailers, including every link in the food chain from farm to table. According to the program's website, "Our approach is holistic; we ensure fair treatment of workers, fair pricing for farmers, and fair business practices."

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ing lemons fully ripe and using them fresh; beyond taste, there is a certain vitality that comes along with fresh-picked fruit, and note: no citrus will increase its sugar content past harvest.

**Eureka and Lisbon** – Classic lemons and very similar in appearance and taste. However, while the Lisbon is a little more shapely a tree, it has big, sharp, numerous thorns.

**Genoa/Italian** – Similar looking to Eureka, but a bit more cold hardy and an excellent-tasting variety. Plus it's Italian, so it has a certain cachet associated with it.

**Meyer Lemon** – A cross, probably between a lemon and either a mandarin or sweet orange from China. And while most adore it, I'm lukewarm at best. Nonetheless, it is a natural dwarf tree, 3–4' on dwarfing rootstock and only 6–8' on standard rootstock, although it is commonly produced from cuttings rather than being grafted onto rootstock. It is highly productive, and along with kumquats, among the most cold hardy of citrus, reportedly tolerating temperatures down to the low 20°s.

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#### *Apprenticeship Updates — from page 7*

**Saskia Cornes** (2010) is the new farm manager and program coordinator at Duke University's campus farm, which has recently added additional staff along with new structures and plantings. In a January 22 article in the online *Duke Today*, Saskia says, "We're looking forward to expanding our presence in academic life on campus and with students and employees." Read more at [today.duke.edu/2015/01/campusfarm2015](http://today.duke.edu/2015/01/campusfarm2015) and learn more about the farm at its website, [sites.duke.edu/farm/](http://sites.duke.edu/farm/)

**Jen Colby** (1999) is the Sustainability Coordinator and manager of the University of Utah's Edible Campus Gardens program. It too is expanding, with the hiring of a new assistant horticulturist. Read about the Edible Campus Gardens and Jen's work at [sustainability.utah.edu/resource-center/get-involved/edible-gardens.php](http://sustainability.utah.edu/resource-center/get-involved/edible-gardens.php)

**Jen Smith** (2004) and **Nate Frigard** (2004) are headed into another season as the farmers at Crimson and Clover Farm, a community-based farm in Florence, Massachusetts, where they serve the local community through their Community Supported Agriculture (CSA) project (375 shareholders in 2014). In his year-end email to shareholders and supporters, Nate wrote, "Our shareholders come to the farm each week with great enthusiasm for cooking and eating local food and for what it takes to grow that food. This vibrant engagement is what brings the farm to life each week and is what makes this work worth doing for us as farmers." Read more about Crimson and Clover Farm at [crimsonandcloverfarm.com](http://crimsonandcloverfarm.com).

#### *Friends of the UCSC Farm & Garden Business Affiliates*

Many thanks to our local business affiliates for their support –

- Jacob's Farm/Del Cabo
- The Glass Jar, including the Picnic Basket, The Penny Ice Creamery, and Assembly in Santa Cruz
- Companion Bakeshop
- The Local Life

Note that Companion Bakeshop will be holding a series of winter baking workshops, starting with a Valentine's Day Confection Workshop on February 9. See the full calendar of their upcoming workshops at [companionbakeshop.com/workshopsandevents](http://companionbakeshop.com/workshopsandevents).

Learn more about the benefits of the Business Affiliates program and how your business can support the outreach, education, and facility improvement work of the Friends of the UCSC Farm & Garden. See our webpage ([casfs.ucsc.edu/community/friends-of-the-farm-and-garden](http://casfs.ucsc.edu/community/friends-of-the-farm-and-garden)), or call Anne Hayes at 831.502-7274, email [adhayes@ucsc.edu](mailto:adhayes@ucsc.edu).

#### **Keep Up with Farm & Garden News!**

Keep up with the latest news from CASFS/UCSC Farm & Garden by becoming a Facebook friend. Type Center for Agroecology and Sustainable Food Systems into your Facebook search engine and "Like" our page. And check out the CASFS website for updates, information and resources: [casfs.ucsc.edu](http://casfs.ucsc.edu)