



# News & Notes of the UCSC Farm & Garden

Issue 136, Winter 2013

## For the Home Orchardist Tending Fruit Trees— A Template for Success

— Orin Martin

So much of fruit tree growing is about learning a tree's patterns: knowing what happens when and where in the tree leads to timely care, optimal growth and annual heavy cropping. This precept can serve as a useful basis for examining the annual cycle of fruit tree growth (see chart) and the associated activities and inputs. Here I'll discuss the periods when it's critical to have nutrients available to fruit trees, and some approaches for meeting those nutrient needs.

Fruit tree roots have two distinct growth periods. The first wave of growth begins in January or February, as much as 3–5 weeks prior to any visible bud swell.\* Actually, "surge" better describes this initial phase of the first growth period: the early-season rate of root growth is rapid, steep, and straight up the curve. Thus it is critical to have nutrients available to nourish this initial growth phase: at planting for new trees, and in January–early March for established trees. Root growth peaks in late April–May and tapers off abruptly just after the summer

solstice, then remains at a low ebb through late summer.

During mid summer, shoot growth is also slowing down and most of a tree's resources are allocated to the rapid enlargement and maturation of the fruit load.\*\* Remember, as much as 70% of a tree's annual carbohydrate reserves go into fruit production, more than into all other activities in a tree: shoot, root, leaf and flower growth combined. Thus fruit is a huge nutrient sink—and you must replenish those nutrients in a timely way for fruit trees to thrive.

Around late summer (August–September) there is a second significant, if less explosive, wave of root growth. This second wave presents another window when trees can be fertilized again. At this juncture, the tree absorbs nutrients and stores them in roots and the tree trunk for quick mobilization the next spring. Then all growth slows and reaches a yearly low coincident with leaf fall and dormancy.

### Making Nutrients Available

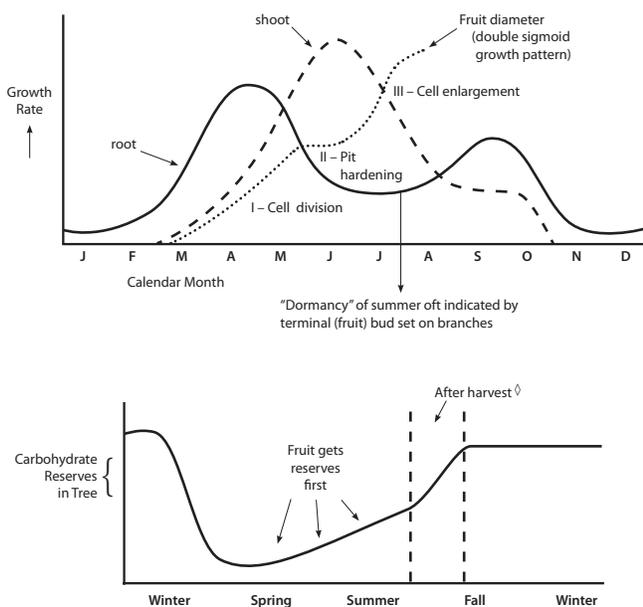
The two periods of root growth described above are times of year when the tree is metabolically active, nay frantic. Roots facilitate nutrient uptake and thus stoke

\*Most soil microbial activity and root metabolism decline precipitously when temperatures reach 40°F or lower; in contrast, deciduous fruit tree root growth commences with soil temperatures in the low 40's.

\*\*In years featuring a low fruit load, trees make more vegetative branch growth and grow longer into the summer. With trees, it's all about resource partitioning.

continued on page 2

Fruit Tree Growth\*



In Santa Cruz, late February–March through mid-late June = "Grand Period of Growth":

1. Roots are actively growing – especially in the early portion of this period
2. Shoots (branches) make almost all their yearly growth April–July
3. Flowering, fruit set and initial fruit development and enlargement
4. Internally – undifferentiated cells are (hopefully) differentiating into next year's fruit buds

All this is happening at once in a compressed time period.

\* Stone fruit specifically, and California central coast, very specifically, but overall reflective of pattern with all deciduous fruits.

◇ This is a critical time period to provision for water and nutrients. It is often coincident with second root upsurge.

the fire of componential aerial growth (leaf, branch, fruit, flower). By having a rapidly available nutrient source in the soil, yearly growth goals can be met if not exceeded.

As to how you can respond to these growth pulses: the earlier you can get out into the orchard and fertilize, the better the trees' enormous early-season componential growth needs will be met. Pomologists of the early 20th century coined the term "Grand period of growth" for the wild tumult of development taking place in spring. Not only are all components of a tree growing actively, but nutrients are also needed to manufacture (internally) next year's flowers/fruit buds. While not as respectable or erudite, the 1950s rocker Jerry Lee Lewis might have said, "Whole lotta shakin' going on" in those trees. So, if you care about growing the tree—and the assumption here is that you do—fertilize early.

Perhaps the following "prescription" can be helpful. It has worked well for me.

Apply the following amendments as early in the season as possible: at planting for new trees, or in January–March (weather dependent) for 1–2-year old trees—

1. 2–3 spadefuls of compost in a 2–3 feet-wide circle around the trunk.

2. An organic source of soluble nitrogen. One of the following:

- ½ lb. bloodmeal (12% N)
  - ¾ lb. Sustane (8% N formulation)
  - 1 lb. Dr. Earth (6% N)
  - 1-1/2 lb. Sustane (4% N formulation)
- on top of the compost.

Work both of these amendments into the top 3–4" of the soil with a tilling fork.

3. Mulch with 3–6" of ramial wood chips (ramial = a fancy word for "fresh"). Straw or leaves can be used in place of the wood chips, but the fresh wood chips activate basidiomycete fungi, which are white rot organisms—very efficient at colonizing the chips and liberating energy (carbon) for soil organisms as well as some nutrients for tree growth. Wood chips also raise the organic matter content of the soil, creating a dynamic storage reservoir for nutrients, particularly nitrogen, phosphorus and sulfur.

4. Water thoroughly and immediately. Water activates dry fertilizer by dissolving it into the soil solution (soil water), where it can be actively taken up by the tree roots.

With young trees, it is also critical to provide and replenish nutrients throughout the season in order to establish the tree as quickly as possible. A tree will not fruit until its structural needs (sufficient root and shoot growth) have been satisfied.

To make sure your young trees are getting the nutrients they need, monitor shoot/branch extension growth. If it is not proceeding apace (apace = >1 foot by late May), repeat the above prescription. And consider doing it yet again if warranted in July. Note, I always base any



Abby Huetter

Bell beans grown around the base of the tree in the fall, then chopped and used as a mulch in the spring, provide nutrients and build the soil's organic matter content.

additional, supplemental fertilization on a perceived real need, not so much a strict calendar schedule.

An alternative to the above mid-season supplemental fertilization is to use a fast-acting liquid fertilizer:

- 6–8 oz. fish emulsion (2% N)
- 1–2 oz. liquid kelp (loaded with trace minerals and plant growth stimulators)

Mix these into a 5-gallon bucket of water and gently apply to the base of the tree in a 2–3-foot wide circle.

### Maintaining Established Trees

The above recipe is a sound approach to fertilizing 1–2-year-old trees. Thereafter, if the tree is growing well, it is feasible to meet yearly fertility needs simply by growing a bell bean cover crop as a green manure. That is, you can harness soil microbe and plant biology to grow all the fertilizer you will need with a cover crop and some mulch (see *Fall 2012 News & Notes* for additional details). This approach is simple, sustainable and elegant. Here's the technique we use:

In September–October, broadcast sow (scatter) bell bean seeds from the trunk out well beyond the dripline\* of the tree. For the backyard gardener, a seeding rate of 8–10 seeds/square foot should suffice. On a farm/orchard scale up to 200 lbs/acre is used in the area covered by the trees. Work the seeds into the top inch of soil using a bow rake. If fall rains are scant, irrigate the seed up. Once the rains begin, you can coil your hoses for the winter.

In late February–mid March, the bell beans will be 4–8 feet tall (they're amazing biomass producers as well as nitrogen fixers), their specific height being a function of winter weather and your soil's fertility. When the beans are approximately ¼ to ½ in bloom, take a well-honed spade or a machete and chop the bell beans down

\* Dripline = outer extent of the tree canopy; envision an imaginary circle around the periphery/circumference of the tree. This is where water, be it rain or sprinkler generated, would drip off the foliage. It is somewhat coincident with the outer extent of the root system.

continued on page 8

# Winter/early Spring Calendar

## The Essence of Fruit Tree Pruning

Saturday, February 2, 10 am – 1 pm

Louise Cain Gatehouse, UCSC Farm

Join Orin Martin and Matthew Sutton at the UCSC Farm for a workshop on fruit tree pruning to review the goals and techniques of winter pruning for pome and stone fruits. Get some hands-on pointers on how to prune your fruit trees to maximize health and production. \$30 general admission; \$20 Friends of the UCSC Farm and Garden; \$5 current UCSC students. *Note: Rainout date = Sunday, February 17.* Pay at the door with cash or check, or online at <http://pruning.bpt.me>

## From Planting to Harvest: A 3-day Fruit Tree Workshop

Friday–Monday, February 8–10

Alan Chadwick Garden, UC Santa Cruz

If you're ready to immerse yourself in the art and science of organic fruit tree growing, this class is for you! This comprehensive course will give you the tools you need to successfully cultivate fruit trees on a backyard or small-orchard scale.

Through lectures and hands-on practice you'll learn how to select appropriate fruit tree varieties; choose and use the right tools; prepare the planting hole; plant, fertilize, and prune your trees; set up an irrigation system; improve the soil with cover crops; and control pests and diseases. Registration cost includes the Fruit Tree Reader, a selection of articles designed for this course.

The course will be taught by Orin Martin, manager of the Alan Chadwick Garden at UC Santa Cruz. Zoe Hitchner and Sky DeMuro, organic farmers at Everett Family Farm, will be co-instructors. Class size is limited to ensure a quality experience, with an emphasis on hands-on learning. Friday's class meets from 5-7:30 pm, Saturday and Sunday sessions meet from 10 am–4pm.

Pre-registration is required. Register online at <http://fruittree.brownpapertickets.com>. If you prefer to pay by check, please send a check made payable to UC Regents for \$300 (general) or \$275 (Friends of the Farm and Garden) to: CASFS/UCSC Farm, 1156 High Street, Santa Cruz, CA, 95064. Attn: fruit tree class. If you have questions, please call 831.459-3240 or email [casfs@ucsc.edu](mailto:casfs@ucsc.edu). *Note: in case of heavy rain, the class will be rescheduled to March 1-3.*

*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 2013 events, see Upcoming Events at [casfs.ucsc.edu](http://casfs.ucsc.edu). No pre-registration or reservation required for workshops, unless noted. UCSC student participation supported by UCSC's Measure 43 funding.*

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

## Growing Blueberries in the Home Garden

Saturday, February 16, 10 am – 1 pm

Louise Cain Gatehouse, UCSC Farm

Liz Milazzo, field production manager of the UCSC Farm, will discuss soil preparation, planting, pruning, and other care tips for blueberries. Learn about varieties that perform well in this region. Wear warm clothes and bring a snack. \$30 general public, \$20 for Friends' members, \$5 for UCSC students. *Note: rainout date = Saturday, February 23.* Pay at the door with cash or check, or online at <http://blueberry.bpt.me>.

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

Monday, March 11, 5 pm – 7 pm

Farm Center, UCSC Farm

Join us as we gather at the Farm Center for the Friends' annual meeting. The evening begins with a short tour of the Farm starting at 5:15 pm, followed by a potluck dinner and business meeting starting at 6 pm. Please bring a potluck item to share and a flashlight for the walk back to your car.

Board officer nominations that will be voted on at the meeting: Daniel Paduano, President; Robin Somers, Vice President; Kevin Bell, Treasurer; Tana Butler, Secretary.

## Docent Training Begins March 12 – see page 4 for details

## Fruit Tree Grafting Workshop

Saturday, March 23, 1 – 4 pm

Live Oak Grange, 1900 17th Ave, Santa Cruz

This hands-on workshop will cover the basics of grafting fruit trees. Come "make and take" a fruit tree! \$30 general public, \$20 for Friends' members, \$5 for UCSC students; free for members of the California Rare Fruit Growers and the Live Oak Grange. *Note: workshop takes place rain or shine.*

*Also coming up at the UCSC Farm & Alan Chadwick Garden*

- March 30, 10 am–1 pm: Composting and Cover Cropping for the Home Garden and Orchard
- April 6, 10 am–1 pm: Non-toxic Gopher Control

## ***CSA Memberships for 2013 Are Now Available***

Memberships in the UCSC Farm's 2013 Community Supported Agriculture (CSA) project are now available. Our CSA members get an array of seasonal, fresh-picked organic produce while supporting the training of new organic farmers. A share of produce contains a diverse supply of freshly harvested organic fruits and vegetables (roughly 9-13 items). A share is designed to feed a household of two or three per week, or a larger family that doesn't cook every day but still wants fresh, organic and local produce.

Our planned start date is June 4, with the full CSA season (22 weeks) extending through November 1, weather permitting. This year we're again offering a half-season option, with the "late-season share" starting on August 20 and running through November 1.

Members also receive a weekly CSA newsletter with recipes and farm updates and a complimentary membership to the Friends of the Farm & Garden (FF&G) for the duration of the CSA season.

Cost of a share for the full 2013 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). You can also find out more information and download a brochure and pledge form at [casfs.ucsc.edu/community-outreach/produce-sales/community-supported-agriculture](http://casfs.ucsc.edu/community-outreach/produce-sales/community-supported-agriculture)

## **Life Lab Offers Professional Development Workshops at the UCSC Farm**

In Life Lab's amazing Garden Classroom on the UC Santa Cruz campus, professional trainers bring inspiration and information to educators interested in bringing learning to life in the garden.

The 2013 Spring-Summer Life Lab Educator Workshops topics include –

- Santa Cruz School Food and Garden Tour
- Plant It, Grow It, Eat It! Garden-Enhanced Nutrition Education
- Sowing the Seeds of Wonder: Discovering the Garden in Early Childhood Education
- The Growing Classroom: An Introduction to Garden-Based Learning
- Growing Healthy, Strong, Inspired Teens
- Common Core Literacy in Science

For schedule and registration details, see – [www.lifelab.org/gcworkshops](http://www.lifelab.org/gcworkshops)

## **You're Invited to Take Our Friends' Membership Survey**

You can help us improve our program, our communications with you, and the benefits we offer our members by filling out the Friends of the Farm & Garden membership survey.

The short survey is available online at: <http://bit.ly/FFG-Membership-Survey>

If you'd like us to mail you a paper copy of the survey to fill out and return, please contact us at (831) 459-3240 or [casfs@ucsc.edu](mailto:casfs@ucsc.edu).

We'll be discussing the survey results at the upcoming Friends of the Farm & Garden Annual Meeting on March 11 (see page 3). We hope to see you there!

## **Docent Training Sessions Start March 12**

Do you enjoy gardening, learning about food and farming issues, and sharing your enthusiasm and knowledge with others? If the answer is "yes!", then consider becoming a tour guide at two of Santa Cruz's most beautiful locations—the 30-acre UCSC Farm and 3-acre Alan Chadwick Garden at UC Santa Cruz.

The 2013 Farm & Garden Docent Training Program will take place on the UCSC Farm on five Tuesdays from 4:00 to 5:30 pm, beginning March 12 and ending April 9.

Farm & Garden volunteer docents help with a range of activities that include tours, public education events, work days, and other efforts that support the CASFS Farm & Garden's community outreach mission.

During the training sessions, participants will learn about organic farming and gardening practices, issues in sustainable agriculture, and the research that takes place at the UCSC Farm. After completing the training, docents are asked to lead six tours a year and are encouraged to help with other efforts that support the Farm & Garden's community outreach work.

For more information and to sign up for the first "no obligation" training session, please contact Amy Bolton at 831.459-3240, or [casfs@ucsc.edu](mailto:casfs@ucsc.edu).

## **Public Invited to Community Seed and Food Justice Summit at UCSC**

Join us February 22-24 for a student-organized event that brings together students, community members, seed savers, gardeners, farmers, and food justice activists to share skills and resources

The weekend event includes a Saturday evening seed exchange and speaker panel, workshops on seed saving, creating local seed library and cooperative networks, creating and managing student-gardens/farms, building beginner farmer programs, and developing fair trade systems. Registration details are available at [Seedlibraries.org/seedsummit](http://Seedlibraries.org/seedsummit)

# Selecting and Planting Blueberries

Nurseries in the Santa Cruz area are currently stocking young blueberry plants, so now is the time to plant your own berry bush. “People don’t usually think about growing blueberries in Santa Cruz,” says Liz Milazzo, field production manager at the UCSC Farm, “but by paying attention to a few important factors they can be a great addition to your garden.”

## Choosing a Variety

The first key is to choose a variety with “chill hour” requirements that match your location. “If you don’t match the chill hours of the plant to your site the plants won’t come out of dormancy properly and you won’t get a good fruit set,” says Milazzo. The most successful berries for the Santa Cruz area will be Southern Highbush varieties, hybrid crosses developed at the University of Florida in the 1990’s, now widely grown in the coastal South, California, Chile and Argentina. Southern Highbush varieties have chill hour requirements ranging from 200 to 600 hours and stay evergreen in Santa Cruz.

Of the 14 Southern Highbush varieties trialed at the UCSC farm, ‘Southmoon’ is the staff’s pick – good yields and excellent, even memorable flavor. ‘Ozark Blue’ is a heavy yielder of good-tasting, large, light-blue berries. ‘Santa Fe’ has great flavor and ripens early, but is not as prolific as ‘Southmoon’. ‘Jewel’ has a large, woody frame that can reach five feet in height, and can work well as a shrub or hedge in the landscape. Milazzo notes that you’ll boost fruit production if you plant more than one variety, perhaps because multiple varieties increase the length of time that pollen is available to bees and other pollinators and thus encourages better pollination.

## Preparing the Soil

Once you’ve picked your varieties and selected a planting site with a minimum of six hours of full sun a day, the next key step is to properly prepare the planting hole (or potting mix if you’re planting in a container).

Blueberries require soils with a pH between 4.5 and 5.5. You can test your soil’s acidity with a home pH test kit, but since most native soils in the Santa Cruz region aren’t acidic enough for blueberries to thrive, it’s likely you’ll need to amend your soil.

To lower the soil’s pH (increase its acidity), dig a shallow hole about 12” deep by 14” wide and backfill it using half the soil you removed and half pre-moistened peat moss; note that peat moss is hydrophobic, so if it is not pre-moistened, it will reject water, leading to poor soil irrigation. Blueberries do well with high organic matter, so also amend the planting hole with some good organic compost. If planting in a pot, use an acidic potting mix combined with compost.

Since blueberries like well-drained conditions, build up a small mound or berm on which to plant. To maintain the soil’s acidity count on mulching each year with a thick

layer (3–4”) of wood chips, redwood duff or pine needles. Fertilize your berry plant in the spring with an organic fertilizer, either animal-based (fish, feather, or blend of animal products) or organic cottonseed meal, according to package directions. Work the fertilizer into the top couple of inches of soil below the mulch, and water well after fertilizing.

## Maintaining Soil Moisture

Maintaining soil moisture is another key to success. Blueberries have relatively shallow roots and require consistent watering, so be sure to plant them in a spot where it’s convenient to irrigate. When watering you can help maintain the soil’s acidic conditions by adding a tablespoon of household vinegar to each gallon of irrigation water. A simple trick for this is to leave a bottle of vinegar (distilled, wine or apple cider will all work) and a measuring spoon near your watering can.

If you’re installing an irrigation system, Milazzo recommends drip tape over microsprinklers in order to keep the plant canopy as dry as possible to avoid fungal diseases. And although this means delaying the pleasure of harvesting your own berries, she also recommends removing the plants’ flowers the first year they’re in the ground to encourage a good strong plant that will produce more over time.

Milazzo also notes that despite their finicky reputation, blueberries are actually pretty tough. “If yours aren’t thriving where you planted them, consider digging them up and moving them to another spot, or putting them in a 7- to 10-gallon pot,” she says.

You can learn more about how to successfully grow blueberries in your yard or garden at the upcoming workshop, Growing Blueberries in the Home Garden, led by Liz Milazzo.

The workshop takes place on Saturday, February 16, from 10 am – 1 pm at the UCSC Farm. \$20 Friends of the Farm & Garden, \$30 general public, \$5 UCSC students. Pay at the door by cash or check, or register online at <http://blueberry.bpt.me>. Call 831.459-3240 or email [casfs@ucsc.edu](mailto:casfs@ucsc.edu) for additional information. *Note: rainout date is Saturday, February 23.*

- Abby Huetter, Liz Milazzo, and Martha Brown



Liz Milazzo describes blueberry plant care at the UCSC Farm.

## The People's Farm & Garden at UCSC

*Editor's note: In July 2012, Environmental Studies professor Daniel Press was appointed executive director of the Center for Agroecology & Sustainable Food Systems (CASFS), the program that manages the UCSC Farm & Alan Chadwick Garden and oversees the many activities that take place there. Here he shares some of his thoughts on the role of the Farm & Garden in the community and some updates on CASFS activities.*

I see the UCSC Farm & Garden as places of learning for multiple generations. This idea of "the people's farm & garden" is already very much in evidence when you look at all the programs taking place: the Apprenticeship training, UCSC classes and labs, Life Lab's work with pre-school to high school groups, and members of the community coming together to learn at these special sites that have been cultivated for more than forty years. These are places that belong to all of us.

I'm excited about the two-and-a-half-acre "Hay Barn Field" that we just opened to cultivation this fall [just across the fence from the Farm's Gatehouse] and the four-acre Lower Quarry field we will soon begin to farm. That may not sound like a lot of land, but relative to the Farm's 25 acres it's a big increase. I see these new lands as places that can serve a diversity of needs as well as a range of audiences. They will allow us to try some new things, such as growing different crops and carrying out research projects that we might not have had room for in the past.

Also, as many of you know, CASFS received a prestigious grant from the US Department of Agriculture's Beginning Farmer and Rancher Development Program late last spring. Congressman Sam Farr came to the UCSC Farm to announce the grant, which will support beginning farmers on the Central Coast and farmers in training at CASFS, including providing scholarships to those from underrepresented communities.

This is one of the most important things we can do: if we don't funnel well-trained young people into sustainable agriculture and address the issue of an aging farmer population, we've got a problem. To have the federal government partner with us confirms the track record we've established and illustrates that we're contributing to something it too finds important.

Finally, I'm pleased to note that we'll be holding a docent training for the Farm & Garden later this winter so that we can increase the number of guided tours we offer [see details, page 4]. This supports the idea that we discussed at a recent CASFS retreat about providing access, not only to healthy food, but to the places that it's grown. I see the docents as our ambassadors in this effort and encourage anyone who might be interested in learning more about organic farming, gardening and sustainable food systems and who is excited about sharing that knowledge to join in the training.

### **New Grants and Gifts Awarded for 2013**

The Joseph and Vera Long Foundation has awarded CASFS a grant of \$40,000 to help support the revision of the two CASFS Apprenticeship training manuals, *Teaching Organic Farming & Gardening: Resources for Instructors*, and *Teaching Direct Marketing and Small Farm Viability: Resources for Instructors*. These manuals, published originally in 2003 and 2005, will be updated and expanded as free online resources and at-cost print resources. The grant will also fund the piloting of some short instructional videos of practical training demonstrations and powerpoint presentations to accompany the online versions of the manual.

The newly-founded UNFI Foundation has awarded a grant of \$12,500 to the Apprenticeship Program in its first round of grant giving. The funding will support the training of new farmers and gardeners in the six-month organic training program at the UCSC Farm & Garden in 2013. Thirty-nine new apprentices from across the country have been selected from 120 applicants to start the full-time program that runs from April 15 to October 18, 2013.

For the second year in a row, the Agadino Foundation has gifted \$5,000 to support scholarships in the Apprenticeship. We also have received a \$1,000 contribution to the Honore Dash Memorial Fund from the Dash family that will be put toward an apprentice scholarship in 2013. Thanks to contributions like these combined with grants earmarked for scholarships, in 2013 we will have the largest pool of scholarship funding available in the history of the program. The Farm to Fork Benefit Dinner, led by alumni chefs and a team of 2012 apprentices, also garnered more than \$23,000 for 2013 scholarships. Additionally, the Apprenticeship is now an approved course for G.I. Bill funding (post 9/11 veterans), making it possible for more veterans to receive tuition support to attend the Apprenticeship Program.

We welcomed year-end gifts from Apprenticeship alumni in increments from \$25 to \$5,000, along with an anonymous foundation grant of \$40,000, all much needed for the core support of the Apprenticeship Program, including salaries for Apprenticeship staff and second-year apprentices.

We are grateful for all of the grants and gifts received for the Apprenticeship, scholarships, and special projects this year. All the members of the Friends of the UCSC Farm & Garden give vital support to the education and outreach programs at the Farm & Garden through membership pledges, special gifts, and volunteer time. Many thanks to all of you!

# Apprenticeship Updates

**Matthew Raiford**, a 2011 Apprenticeship graduate, is now farming in Georgia with his sister Althea on their fifth-generation family farm. Founded in 1874, Gilliard Farm recently received a Georgia Centennial Farm Award, presented to Georgia farms that have remained in the same family as a working farm for more than 100 years. This was the first time the award has been made to an organic farm.

An article in the Georgia African American Historic Preservation Network's newsletter *Reflections* quotes Matthew, who is also an executive chef, on his approach to farming: ". . . as a chef, the quality of food I prepare has always been of utmost importance. As farmers, Althea and I invest all that we can into producing extraordinary food that nurtures the body and the being. At Gilliard Farms, we extend our passion for eating well to and beyond our surrounding community, knowing that with their strong support we can do anything."

**Lennie Larkin** (2011 graduate) is now the farm manager at Petaluma Bounty Community Farm, an educational urban farm growing sustainably farmed food for the community. As part of her work there, Lennie also teaches sustainable agriculture to students, interns and the general public. The farm was started by Apprenticeship graduate **Amy Rice-Jones** (now **Amy Ridout**), who is now the farm coordinator at the College of Marin's Indian Valley Organic Farm and Garden

The Farm-Based Educational Association recently profiled **Elizabeth Bee Ayer** (2009), the Co-Farm Manager at BK Farmyards' Youth Farm in Brooklyn, New York. Read about Elizabeth's urban farming and education work at <http://www.farmbasededucation.org/page/q-a-with-elizabeth-bee-ayer>

**Ana Rasmussen** (2010), founder of Mesa Verde Gardens, was recently named a Community Hero by the United Way of Santa Cruz. In announcing this year's awards, the program writes, "Mesa Verde Gardens helps working poor and unemployed families create their own affordable, sustainable food system in the agriculturally rich Pajaro Valley. Garden participants

## 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: <http://casfs.ucsc.edu>

grow fruits and vegetables in individual plots, improving their families' food security and health while building healthy communities literally from the ground up. Ana founded the gardens with a tenacious commitment to improving residents' access to healthy food within a culturally competent framework." Ana also ran a successful Kickstarter campaign this fall to raise funds for a community orchard in Pajaro.

Ebony magazine named **Karen Washington** (2008) to its "Power 100" list as one of the most influential African Americans in 2012. Karen headlined this year's Northwest Organic Farming Association conference. Her keynote speech title: Hands across the Fields: Bridging the rural/urban connections. What role do we each play in working towards a sustainable food system?

National Geographic blogged this fall about Pie Ranch, founded by CASFS Farm & Garden alumni **Jered Lawson** (1994) and **Nancy Vail** (1997). Read the post here: <http://newswatch.nationalgeographic.com/2012/12/11/a-roadside-ranch-with-a-sweet-lesson/>

**Molly Rockamann** (2005), founder of EarthDance Farm outside St. Louis, Missouri, was named by the Worldwatch Institute as one of the 25 youths who are making agriculture "both intellectually and economically stimulating for youth around the world." See her at #17 on their post, <http://blogs.worldwatch.org/nourishingtheplanet/making-agriculture-cool/>

Author and teacher **Michael Pollan** visited the UCSC Farm this fall, where he met with CASFS executive director Daniel Press and Apprenticeship staff members, and enjoyed a farm tour. This was Pollan's first visit to UCSC.



Michael Pollan (center) on a visit to the UCSC Farm.

#119  
University of California Santa Cruz  
Center for Agroecology & Sustainable Food Systems  
1156 High St.  
Santa Cruz, CA 95064

Nonprofit Org.  
U.S. POSTAGE  
**PAID**  
Santa Cruz, CA  
Permit No. 32

*Tending Fruit Trees — from page 2*

at their base. The nitrogen fixed via bacteria and root nodules will slough off into the soil for the tree to absorb via its roots.

Next, spread the chopped bell beans evenly over the soil surface. They can be chopped up slightly or finely, as you wish. Remember though, that when it comes to decomposition, the finer the particle size of the material, the quicker and more thorough the decomposition. The reasoning being:

- Smaller particle sizes translate to a greater surface area for the microbes to “feast” on.
- In breaking apart plant structure, the material is “softened up” and more susceptible to microbial enzymatic decomposition.

Then apply a thick layer of mulch:

- 3–4” ramial wood chips, or
- 4–6” clean straw, or
- 3–4” tree leaves (broad leaf, not conifer)

If feasible, add a thin layer of good soil sandwiched between the chopped-up bell beans and the mulch. This is essentially a low-heat, long-term sheet composting system, featuring virtually no tillage.\*

Finally, go listen to a Giant’s spring training ballgame and (if you’re so inclined) enjoy an adult beverage, confident in the knowledge that your trees are well nourished for the coming year.

*Learn more about fruit tree care and get hands-on practice in fruit tree selection, planting, and pruning at the upcoming “From Planting to Harvest” 3-day short course taught by Orin Martin, Zoe Hitchner and Sky DeMuro. The workshops takes place February 8–10 at UCSC’s Alan Chadwick Garden. See details, page 3.*

\*It is interesting to peel away the mulch occasionally and monitor the rate of rot down. Within 7–14 days, most of the succulent green material will be unrecognizable as bell beans. And within another 4–5 weeks, the mix begins to resemble quality compost, if it is recognizable as distinct from the soil at all.