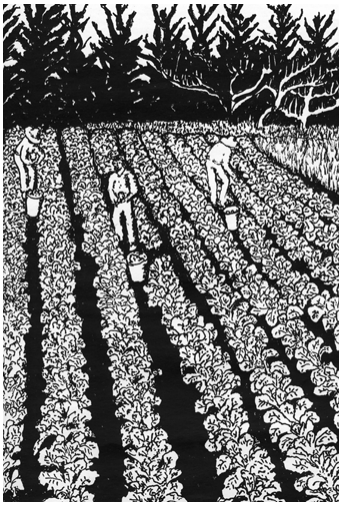

Forrest Cook

# *News & Notes of the UCSC Farm & Garden*

***Issue 138, Summer 2013***

## *Making Quality Compost*

*– by Orin Martin*

Compost, the process and the product, is yet another example of harnessing biology to assist us in promoting healthy soil that in turn grows quality crops. Compost, green manures (cover crops), and sound soil cultivation practices are the three primary drivers of any sustainable growing system. Indeed, we are "biological farmers/gardeners," not merely organic growers. We also find ourselves enamored of the Buckminster Fuller phrase, "Work smart, not hard," or at least, "Work smart, not *so* hard."

Composting is about the decomposition and transformation of heterogeneous organic wastes (basically anything that was once alive) into a homogeneous, stable end product—organic matter/humus, or as we call it, compost. Quality compost is a uniform product black in color, crumbly in texture, sweet smelling, slightly greasy to the touch and a powerful reservoir of plant nutrients that are released slowly over time via further biological activity. You can think of compost as "black gold" for the garden or farm—arguably the most precious substance on the planet.

No self-respecting definition of compost would be complete without the phrase "under controlled conditions." Yeah, "compost happens," as the bumper sticker states, but you may actually be able to make compost better (and certainly quicker) than nature can.

***Benefits***

Among the attributes of compost are –

• It immobilizes nutrients in the bodies of microorganisms. This keeps nutrients, especially nitrogen, from leaching out of the pile. When the finished compost is applied to the soil, nutrients are released slowly and in forms available to plants.

• It increases soil organic matter and cation exchange capacity, which is simply a measurement of the capacity of a soil to hold and exchange cation nutrients such as calcium, magnesium, and potassium necessary for plant growth.

• It provides a feedstock of nutrients as well as the "habitat" for beneficial soil microbes

• It kills (some, not all) plant pathogens and weed seeds during the composting process

• It inoculates the soil with beneficial microbes (bacteria, fungi, actinomycetes, etc.)

• It improves soil structure by promoting soil aggregation (binding soil particles together), which in turns promotes aeration, moisture retention, permeability, and consistency, thus improving the "workability" of a soil.

• It is usually panacea-like in solving whatever problem your soil has.

***Process and Participants***

In constructing a compost pile you are setting the stage for the biological, chemical and physical decomposition of bulky organic wastes and recycling of nutrients, taking the large, the rigid, the dry (think corn stalks), as well as the particulate, the wet and the slimy (think matted grass clippings or gloppy kitchen scraps) and then transforming them.

This is a highly aerobic process, as oxygen fuels the metabolism of the microbes principal in the decomposition process. In fact, you could refer to a compost pile as a "microbial layer cake." The decomposition is carried out by succeeding waves (populations) of micro- and macro-organisms. You play the role of facilitating this process. In a sense, composting is a form of animal husbandry or "microbe farming."

As with any successful husbandry effort, habitat, diet, and water are the key building blocks of a successful compost pile. A compost pile is simply "pasture" for microbes. Via its ingredients, the pile provides a feedstock for (initially) microbial populations and eventually the "finishers" or "shredders and chewers," macro-organisms like earthworms, mites, sow bugs, centipes, millipedes, etc. Microbial populations tend to be ubiquitous, thus

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there is no need for inoculants, as small populations exist on much of the substrate used in composting.

The composting process has three distinct phases:

- 1: Mesophilic (50º–113ºF) – Moderate temperatures, usually lasting under a week
- 2: Thermophilic* (113º–150ºF) – High temperatures, usually lasting 3–4 weeks
- 3: Curing – Ambient temperatures, lasting >3 months

* small piles, made incrementally, will not get very hot

During the first phase, waves of bacteria and fungi multiply rapidly and feed on the succulent plants in the pile. When the pile is properly constructed, the first 24–48 hours feature an explosive, literally exponential growth of these organisms (bacteria can double their populations every 20–60 minutes). Often, there is no recognizable plant material in the pile after even a few days thanks to the chemical decomposition taking place. Remember, bacteria and fungi do not have mouthparts, and thus do not chew; rather, they secrete enzymes and acids that break down plant materials, and absorb the sugars and simple proteins for nutrition.

The next phase of decomposition features thermophilic, or heat-loving, organisms—still some bacteria, but increasingly, fungi. Fungi decompose (again, chemically) more complex carbon compounds such as chitin, cellulose, and lignin.

As the pile cools and begins its curing process, a third microbial population comes to the fore—a type of actinobacteria often referred to as actinomycetes. These have the simple cell structure of bacteria, but grow multicellular, hyphae-like filaments resembling fungi. Their enzymatic role is to degrade tough, resistant-to-rot woody stems and bark. Their gray-white filaments look "cobwebby" and have a pleasant, earthy smell. They can rot a redwood stake in the ground in 9–15 months.

When a pile has cooled and cured for 1–3 months, macroorganisms move in to finish the job. These organisms—mites, springtails, centipedes, millipedes, sowbugs, ants, nematodes, earthworms, etc.—are physical (as compared to chemical) decomposers. They use their mouthparts to chew, shred and further break apart resistant materials, as well as feed on dead bacteria and fungi. In doing so, they also create a softer, more "open" substrate that can be re-colonized by bacteria and fungi, which break the materials down further.

### *Five Criteria for Success*

What are the criteria for successful husbandry of a compost pile?

1. *Pile Size and Dimensions*

Conventional wisdom now states a minimum size of 5′ x 5′ x 5′ is required for successful composting. Home gardeners, don't despair—*ideal* dimensions are about (maximum) volume to (minimum) surface area ratios. That is, a big pile has more internal mass and thus a more hospitable decomposition environment

Abby Huetter

Chadwick Garden manager Orin Martin adds straw to a compost pile in the garden's "compost row."

for the microbes involved. The bigger pile also features less surface area, as the ambient environment largely degrades the pile's surface.

That said, one of the more successful (no muss, no fuss) compost piles I have ever built was during a Garden Cruz: Organic Matters community workshop, and was a scant 2′ x 3′ x 2′. It was quick and dirty, using alternating layers of:

- 2–3″ of old horse manure
- 2–3″ of rice straw and oak leaves
- 1-2″ of really nasty kitchen scraps

plus a modicum of water

The pile heated to 140º, maintained temperatures above 130º for a month, was turned once as it cooled down and produced beautiful compost in 3–4 months. So, size isn't everything.

Some tips re: pile dimensions:

- Oxygen does not move passively more than 3–4′ into a pile, so width should not exceed 6–8′
- It is impractical (i.e., too much heavy lifting) to build a pile more than 3.5–4′ in height
- Length is simply a function of the volume of material on hand
- Re: pile shape: a cube is better than a pyramid or tapered haystack

2. *Particle Size of Ingredients*

The principle is: the smaller the particle size (think chopping, shredding) the greater the surface area, the more the microbes can "occupy space" and thus the faster the rate of decomposition. Chopping plant material also breaks apart the rigid, often waxy outer cuticle of plants, making the succulent "innards" more accessible to the enzymatic and acidic secretions of bacteria and fungi, thus speeding and contributing to more thorough decomposition.

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# Summer/early Fall Calendar

## Summer Pruning Workshop

*Saturday, July 27, 10 am - 1 pm*
*Louise Cain Gatehouse, UCSC Farm*

Although we often think of pruning as a winter chore, summer pruning is one of the best ways to ensure the health and productivity of your fruit trees. Learn the basics of summer pruning from Chadwick Garden manager Orin Martin. Wear comfortable shoes, sun protection, and bring a snack. $20 for Friends' members, $30 general admission, $5 for UCSC students. Register online at http://summerpruning.bpt.me or pay at the door with cash or check.

## Docent-Led Tours of the UCSC Farm

*Sunday, August 4, 2 pm – 3:30 pm*

*Sunday, September 1, 2 pm – 3:30 pm*

*Sunday, October 6, 2 pm –3:30 pm*

Take a free guided tour of the 30-acre UCSC Farm at UC Santa Cruz! Guided tours are offered the first Sunday of the month, starting at 2 pm at the Louise Cain Gatehouse on the UCSC Farm. No reservations required.

## Late Season CSA Share Pickups Begins

*Tuesday, August 20 – Friday, November 1*
*Pick up at the UCSC Farm or at the Market Cart*

Get in on the summer bounty by becoming a "late season" CSA member! Members receive a weekly share of summer and early fall produce from the UCSC Farm. See details on page 4.

## Planting the Thanksgiving Feast: Fall Gardening Workshop

*Sunday, August 25, 10 am – 1 pm UCSC Farm*

Gardening instructor Trish Hildinger will teach you how to plan ahead and extend your gardening season with timely tips on what to plant and how to plant it for harvest in November and through the winter. This workshop is designed for beginning and intermediate gardeners. Wear comfortable shoes and bring a snack. $20 for Friends of the Farm & Garden members, $30 for general public, $5 for UCSC students. Register online at http://fallgarden.bpt.me or pay at the door with cash or check.

## Farm & Garden Fall Plant Sale

*Friday, September 6, 12 pm – 6 pm*

*Saturday, September 7, 10 am – 2 pm*
*Corner of Bay & High Streets, Santa Cruz*

Fall is a wonderful time to plant vegetable crops to extend your gardening season and give perennials a good head start for spring. The region's best-suited varieties of organically grown winter vegetables and landscape plants will be available. Friends of the Farm & Garden receive 10% off all plant and merchandise purchases. Friends' memberships are available at the sale.

## 3rd Annual Farm-to-Fork Dinner

*Sunday, September 15, 3 pm – 7 pm UCSC Farm*

Plan to join us for this special fundraising dinner at the UCSC Farm and help support participants in the Apprenticeship training program in organic farming and gardening. See page 4 for details.

## 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 email casfs@ucsc.edu.

## Choosing and Using Cover Crops in the Home Garden & Orchard

*Saturday, October 12 , 10 am – 1 pm*
*Alan Chadwick Garden*

Chadwick Garden manager Orin Martin teaches this class on how to protect and improve your soil with fall-planted cover crops. Wear comfortable shoes and bring a snack. $20 for Friends of the Farm & Garden members, $30 for general public, $5 for UCSC students workshop. Register online at http://covercrops.bpt.me or pay at the door with cash or check.

*If you'd like more information about these events, need directions, or have questions about access, please call 831.459-3240, email casfs@ucsc.edu, or see our web site, 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. UCSC's Measure 43 supports UCSC student participation in workshops.*

### Catch the Last Wave! Late-Season Shares in Community Supported Agriculture (CSA) Program Now Available

If you're away for part of the summer but still want to get in on the UCSC Farm's CSA program, here's your chance! We're once again offering a "late season" CSA share of freshly harvested organic fruits and vegetables. The 11-week season starts August 20 and runs through November 1. One share feeds 2–3 people per week.

Late-season shares will feature strawberries, corn, green beans, zucchini, heirloom tomatoes, cooking greens, lettuce and salad greens, basil, carrots, beets, sweet peppers, winter squash, onions, potatoes, apples and pears. Members also have access to the Farm's "pick-you-own" flower and herb garden and receive a weekly newsletter with recipes, Farm news, and local gardening event information.

Cost of the late season share is $280. Payment can be divided into two installments. Pick up days are Tuesdays and Fridays from 12 pm–6 pm, and shares can be picked up at the UCSC Farm, at the Market Cart at the base of campus, or at the new Westside Farm & Feed, located at 817 Swift Street.

For more information, call Amy Bolton at 831.459-3240, email farmcsa@ucsc.edu, or see the CSA website: casfs.ucsc.edu/community-outreach/produce-sales/community-supported-agriculture

### Market Cart Now Open

The Market Cart takes place twice a week at the base of the UCSC campus, with free parking on site. Stop by Tuesdays and Fridays from 12 noon – 6 pm to pick up freshly picked organic strawberries, lettuces, cooking greens, broccoli, beans, beets and much more, along with beautiful flower bouquets.

### New Exhibit on Tap at Santa Cruz Natural History Museum

A special exhibition sponsored by UCSC's Friends of the Cowell Limeworks Historic District and the San Lorenzo Water District will explore the natural and cultural history of limestone, lime, and marble in the Felton – Santa Cruz area.

Set to open September 21 at the Santa Cruz Natural History Museum, the exhibit will include displays of mineral and crystal specimens, 19th century artifacts from the lime industry, never-before-seen historic photos, activity stations for children, and much more.

As part of the exhibit, enjoy a series of Fall field trips, each on a different theme: geology, historic lime kilns, and the environmental impact of the lime industry. Learn more at http://santacruzmuseum.org/explore-the-museum.

### Third Annual Farm to Fork Dinner Set for Sunday, September 15

Plan to join us for this special benefit dinner at the CASFS/UCSC Farm to fund scholarships and other support for our Apprenticeship training program in organic farming and gardening. Enjoy the views of the Farm and the Monterey Bay as you dine on an array of courses created by executive chef Matthew Raiford, and by Amy Padilla and Heidi Schlecht of Feel Good Foods. Menu details coming soon!

The event begins at 3 pm with a reception and tours of the UCSC Farm, with dinner from 4–7 pm. A silent auction will also take place starting at 3 pm.

Tickets are $125 and are available online at http://2013farmtofork.bpt.me (service charge applies). For mail orders, send a check for $125 per ticket made payable to UC Regents to: CASFS/UCSC Farm, 1156 High Street, Santa Cruz, CA 95064. Attn: Farm-2Fork dinner. This event sold out last year, so purchase your tickets soon.

Personal and corporate sponsorships for the dinner are available. Please contact us at arblake@ucsc.edu or (831) 459-3857 for details of sponsorship options.

### Grants Support Apprenticeship Training, UCSC Undergraduate Program

Generous grant funding received this spring will support a variety of Apprenticeship and UCSC undergraduate activities this summer and in the coming year.

A $75,000 grant from the Clarence E. Heller Charitable Foundation will fund new courses and expanded internship opportunities in agroecology through UCSC's Environmental Studies Department. The grant will support instruction in both hands-on and research-related activities for students at the UCSC Farm, especially at the new Hay Barn field (see page 5). Also being planned is a new course in Urban Agriculture and a series of both on- and off-campus internships in farming, market gardening, and research in agroecology.

Two grants from the Newman's Own Foundation totaling $50,000 will support the Apprenticeship Program's training of 2013 and 2014 apprentices at the UCSC Farm & Garden.We are grateful for long-standing support of the Newman's Own Foundation for the training of new organic farmers and gardeners through the Apprenticeship.

The Apprenticeship also benefitted from new scholarship funding this spring, including a $5,000 grant from the Nalith Foundation and a $6,000 gift from Dr. Henry Chang.

# The Farm is Growing! New Fields Add Production, Research, and Teaching Opportunities

***- by Heather Griffith***

For the first time since 1971, the UCSC Farm at the Center for Agroecology & Sustainable Food Systems (CASFS) is expanding this summer, adding two new fields to the current 25-acre site. The Hay Barn Field and Lower Quarry Field will expand production capacity and create new opportunities for research and education at the UCSC Farm.

The 2 ½-acre Hay Barn Field adjoins the south edge of the Life Lab Garden and slopes down toward the Hay Barn and Coolidge Drive. Combined with the Lower Quarry Fields, bordered by the bike path and Hagar Drive, CASFS is gaining a total of up to 6 new acres for cultivation.

The Hay Barn Field will play a variety of roles, according to Darryl Wong, CASFS's Farm Site and Research Lands Manager. Wong plans to split the Hay Barn Field into five large plots that will be put into a five-year rotation.

Doing so will accomplish several goals, the first of which will be to grow crops specifically for sale to UCSC's Dining Services as part of an effort to work more closely with the campus community. Growing larger blocks of crops will also give CASFS apprentices an opportunity to experience organic farming practices on an expanded scale, and will create space for more faculty research experiments. Putting this new land into production will also create new opportunities for undergraduate students to be involved in farming through internships and practicum-style classes.

The types of research proposed for the Hay Barn field include monitoring the soil to see how it responds to organic management techniques over time. Since the Hay Barn field has not been actively cultivated before, it presents an opportunity to observe what happens to the soil when a natural ecosystem is converted to an organic agroecosystem. Possible research projects include analyzing the weed seed bank for the types and amounts of weed seeds present, measuring the amount of organic matter in the soil over time, and testing the ability of anaerobic soil bacteria to suppress pathogens, such as those that plague strawberries.

The Hay Barn Field now sports a new deer fence and has been tilled for production; work on an irrigation system is now underway. Wong anticipates planting crops for fall harvest, such as strawberries, peppers, potatoes, broccoli or cabbage, summer squash, or onions, to be sold to dining halls on campus.

The Lower Quarry Field is still a year or so away from the same kind of intensive cultivation. Wong plans to start dry-farming wheat there in January. Even though deer and ground squirrels will get some of the harvest without a fence to stop them, Wong is eager to start putting the fields to use. Eventually, they will be fenced and irrigated, and perhaps incorporated into a similar crop rotation as the one planned for the Hay Barn Field.

Cultivating these fields provides a unique opportunity to observe how soil changes once organic farming practices are implemented. Wong predicts that the fields may have high yields in the first year or two of production, since they have high levels of organic matter in the soil due to not having been cultivated in the past. Those yields could begin to taper off after the first couple of years, as the organic matter is digested and used up over time.

One way to prevent yields from dropping would be to apply compost to the new fields at a higher rate than is used on the rest of the farm's fields (which have the advantage of decades of compost amendment), to keep the organic matter level as consistent as possible.

The numbers of weeds may also increase as the fields are cultivated, as working the soil will bring dormant weed seeds to the surface and give them space to grow. A baseline of soil, weed, and insect samples has already been taken, making it an ideal opportunity for researchers to observe changes in the site's ecosystem over time.

With the scheduled renovation of the historic Cowell Ranch Hay Barn, the Hay Barn Field will also be part of the "gateway" to the UCSC Farm and to the campus, making the farm and other CASFS activities more visible to UCSC visitors and students alike. As a center for organic agriculture education that is striving to be more integrated with the campus community, Wong says, it is encouraging to see CASFS get that kind of recognition.

CASFS executive director Daniel Press stands next to the newly turned Hay Barn field. The historic Cowell Ranch Hay Barn, slated for renovation, is in the background.

## *Making Compost – from page 2*

3. *Aeration*

As oxygen fuels the metabolism of the decomposers in a pile, the pile construction should feature adequate pore/air space. This is readily achieved by layering together an admixture of course materials and fine-chopped materials.

Once the process is underway (1–3 weeks) a pile will settle, losing 30–50% of its volume as the materials are physically broken down. At that juncture there is usually a sharp drop in temperature. As the pile settles, reducing pore/air space, and as microbial populations exhaust the oxygen supply, oxygen becomes a limiting factor. This is an opportune time to turn and re-aerate a pile. There is often a spike in temperature associated with turning: as oxygen is resupplied, microbial populations boom—the heat generated is a byproduct of their metabolism as they continue to break down materials in the pile.

4. *Moisture*

Compost pile ingredients should be about 40–60% moisture (by weight). This equates to the consistency of a wrung-out sponge. It is best to apply water (sprinkle-spray, not drench) incrementally to each layer as you construct a pile. The moisture is for the microbes, but it also softens the pile ingredients. A note: as water will trickle down from top to bottom, apply less water to the lower layers of the pile. Also, as plants are merely supported columns of water (60–90% by weight), more water will be released into the pile as decomposition progresses. Thus, be conservative with the initial water application.

5. *Carbon to Nitrogen Ration (C:N)*

The ideal C:N ratio at the outset is suggested as 30–40:1. This means the pile has 30–40 times more carbon-rich than nitrogen-rich material by weight.

While all materials contain some carbon, carbonaceous materials (think "browns": straw, leaves, wood chips, etc.) contain primarily carbon, and similarly, nitrogenous materials (think "greens": fresh, lush plant material and animal manures) feature a high nitrogen content relative to carbon.

What is important vis a vis C:N ratio is that this is the ideal proportion to fuel the diet of the pile's microbial decomposers. In essence, they use carbon to nitrogen in a 30–40:1 ratio.

Microbes use the carbon-rich ingredients as building blocks for cellulose and, as we do, for carbohydrates that fuel their work. They use the nitrogen to build proteins, amino acids and enzymes that are necessary for cell growth, function, and reproduction. Enzymes are also key to the decomposition process; they act as biological catalysts, accelerating biochemical reactions and hastening the breakdown of organic matter. It is interesting to note that

Abby Huetter

An apprenticeship student uses a machete to chop up compost ingredients into smaller pieces.

the enzymes produced by bacteria and fungi persist and function long after the producing organisms have died. In fact these same enzymes contribute to the breakdown of the "microbial corpses" that produced them.

You can achieve the desired 30–40:1 C:N ration by combining comparative volumes of carbon-rich (brown) and nitrogen-rich (green) ingredients in layers. A wide range of comparative volumes will work, from 50% carbon-based materials combined with 50% nitrogen-based materials, to as much as 80% nitrogen-based materials and 20% carbon-based materials. The pile higher in nitrogen will heat up more quickly, get hotter (130–150ºF), stay hot longer, break down faster, and kill more (but not all) weed seeds and plant pathogens.

In creating the "microbial layer cake," thin, repeated layers work best. For example:

- C: 2" straw/leaves/wood chips, etc. (straw is a good absorptive material to use at the base of the pile)
- N: 2" kitchen scraps
- C: 2" straw/leaves/wood chips, etc.
- N: 6" fresh horse manure
- C: 2" straw/leaves/wood chips, etc.
- N: 4" greens
- C: 2" straw

Repeat to height of 3–4'

The pile would then feature 40% carbon-based materials and 60% nitrogen-based materials by approximate volumes and predictably, do quite well.

Note that vegan, or non-manure piles, work fine. The value of animal manures is that they are both rich in nitrogen and microbes—a sourdough starter of sorts to jumpstart a pile.

*continued on page 8*

# Apprenticeship Updates

Graduates of the CASFS Apprenticeship training program based at UCSC's Farm & Alan Chadwick Garden are now at work throughout the U.S.—including the U.S. Virgin Islands!—farming, teaching, and doing research on ways to improve the food system. Here are some updates on our alumni:

**Eric Nelson** (2012) is managing Western Washington University's Outback Farm in Bellingham, Washington. The Outback Farm is a 5-acre farm and wetland restoration site that provides experiental learning in organic agriculture and ecosystem restoration. Over 50+ community garden plots are available for both students and the Bellingham community. The farm also grows food for the Bellingham Food Bank.

**Tim Crews** (1981) has moved on from Prescott College in Arizona, where he was a faculty member for many years, to become director of research at The Land Institute in Salina, Kansas. He is studying the way that insights from prairie ecosystems can be applied to mixtures of perennial food crops in order to minimize the need for nutrient inputs. Read more at www.landinstitute.org.

**Amy Ridout** (formerly Rice-Jones) (2011) is now managing the Indian Valley Campus's Organic Farm and Garden, part of the College of Marin's Environmental Landscaping and Organic Farming training program.

**Claudia Seixas** and **Jim Marzluff** (2012) are managing the Ridge to Reef Farm's Community Supported Agriculture (CSA) project in St. Croix, U.S. Virgin Islands. The farm includes training programs, and on-site eco-farm stays and camping. Learn more about the project at www.ridge2reef.org.

**Josh Hardin** (2007) owns and manages Laughing Stock Farm in Sheridan, Arkansas. The farm supplies local restaurants and markets year round.

**Katie Davis** (2007) is the Farm Director at Jones Valley Teaching Farm in Birmingham, Alabama. Their website lauds here work there, saying that "From soil quality to crop rotation to seasonal plans and overall productivity, Katie is the brains, backbone, and green thumb of our farming operation." Read more about this unique teaching and production farm at jonesvalleyteachingfarm.org.

The film "Symphony of the Soil," on which **Jessy Beckett** (2009) served as production manager and associate producer, has been playing to wide acclaim at fim festivals and other events across the U.S. Jessy and the Friends of the Farm & Garden sponsored a showing of the film in Santa Cruz this spring, raising scholarship funds for future Apprenticeship participants. Learn more about the film at www.symphonyofthesoil.com

**Amy Miller** (2012) started Growing Social, a farm-based camp in Soquel, California that provides therapeutic, educational camp sessions for those with social learning challenges. Learn more about the project at www.growingsocial.org,

**Matthew Raiford** (2011) was recently hired as the program coordinator for culinary arts at the College of Coastal Georgia. "Chef Matthew Raiford is a wonderful addition to our already strong team in hospitality management. He brings a portfolio of excellent training, great experience, and a commitment to a farm-to-table dining format," said Dr. Skip Mounts, Dean of the School of Business and Public Affairs which includes the culinary arts program. Along with his new job and running his family farm in coastal Georgia, Matthew plans to help cook for and host the upcoming Farm to Fork benefit dinner at the UCSC Farm on September 15 (see page 4).

**Kate McDevitt** (2010) is the senior community health program representative in the department of pediatrics at the UC San Diego School of Medicine and this year's Principal Exemplary Staff Employee of the Year. In a ppress release announcing the award, Kate says she believes in the power of "taste education." By teaching kids how to grow, harvest and cook fruits and vegetables, a new appreciation and enjoyment for health and nutrition can be fostered at an early age.

## 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.

Another great way to stay current with what's happening at the Farm & Garden is through the *Field Notes* newsletter. Written by members of the 2013 Apprenticeship class, *Field Notes* goes out to our Community Supported Agriculture (CSA) members each week and contains news and updates from the Farm & Garden and the Apprenticeship, along with timely recipes that feature the week's harvest. You can access current and past issues of *Field Notes* on the CASFS website:

http://casfs.ucsc.edu/community-outreach/produce-sales/community-supported-agriculture

And check out what many of the Apprenticeship graduates are doing with their training at the Grow a Farmer website (www.growafarmer.org), which includes information on the Apprenticeship and the Farm & Garden, profiles of alumni, blog and video posts, and resources for beginning farmers.

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*Compost – from page 6*

***The Home Gardener's Dilemma***

Typically, home gardeners have:

- Small, incremental volumes of compost materials
- No easy access to animal manures
- An overabundance of wet, nitrogen-rich kitchen scraps
- A shortage of all other ingredients
- And a reticence to commit to composting

You can still make reasonable compost (low heat, long term) by alternating thin (1–2" inch) layers of kitchen scraps, with layers of straw or leaves (2–3"), and perhaps a little garden soil (1"). Moisten the dry ingredients as you go.

Build the pile on a 3'x3' footprint and layer (over time) to 3' high. Turn the pile once or twice. Start the next pile adjacent to the first.

In layering a pile, consider also alternating wet/dry ingredients, as well as large or bulky and small-particled ingredients. Layering approximates the much harder job of mixing, shredding, and homogenizing, the goal being to meet all five of the criteria described above at every site in the pile.

As compost is a lot like democracy—the broader the constituency base, the greater and richer the end product—it's worth stockpiling a range of ingredients to use in the home garden pile:

- A bale of straw (not hay, as hay has seeds)
- A trashcan full of leaves, wood chips, etc.
- Some bagged chicken manure

Introducing these ingredients into the mix/layering system described above will result in a better composting process and a more nutrient-rich end product. If flies or gnats are a problem, a light dusting of woodash, lime, or soil helps.

Your finished compost can be used both to fertilize plants and to improve soil structure. Before you work the soil (digging or forking), spread compost on the surface of your bed. Then as you dig it will be worked in uniformly to the depth you are working the soil. Typical intensive garden application rates are ½–2 pounds/square foot. This range is dependent on your present soil development and fertility.