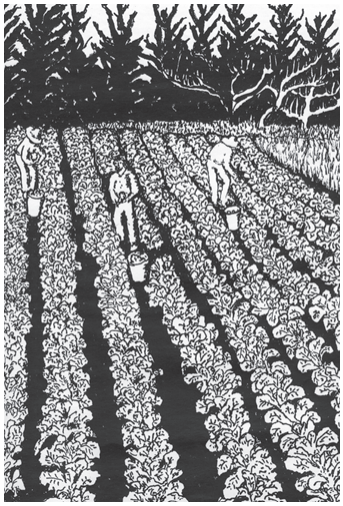

Forrest Cook


# News & Notes of the UCSC Farm & Garden

*Issue 142, Summer 2014*


## The How's and Why's of Summer Fruit Tree Pruning

*– by Orin Martin*

***Introduction***

Summer pruning has an overall de-invigorating affect on vegetative fruit tree growth. It reduces, limits, eliminates, and induces—

***Reduces***: By thinning out entire branches or "cutting to weakness"* at the top of a tree you can:

- Reduce overall tree height
- Reduce the number of shoots/branches and thus allow more sunlight into the interior of the canopy. As sunlight does not move more than 3–4 feet into a canopy, and as >50% sunlight on the fruit buds is required to produce fruit, by thinning out crowded branches on high, you create "chimneys" or "alleys" of light in the tree's lower regions. This keeps the most easily accessed portion of the tree lively and fruitful.

While thinning pruning can be done summer or winter, the dividend of summer thinning is being able to immediately see the increase of light into the tree's interior. This can be quite dramatic in the presence of willing learners; it often elicits "oohs" and "aahs" as the branches fall to the ground and sunlight tumbles down.

***Limits***: The regrowth of branches after summer pruning cuts is minimal (more on this below), often inches compared to feet following winter pruning. Therefore you can use summer pruning to "shape" the tree without creating unintended new growth.

***Eliminates***: Summer pruning thins out excessive branches (both in number and length).

***Induces***: Under optimal conditions, summer pruning of a pome fruit's (apple or pear's) lateral branches—the shoots growing off the primary scaffold branches that emerge from the central trunk—induces rapid formation of the fruit buds that will become next year's fruit crop. These fruit buds are in fact perennial organs, bearing fruit for a number of years.

***Summer vs. Winter Pruning***

Summer pruning takes place in the Monterey Bay region from early August to mid September, while dormant winter pruning happens from leaf drop in December until trees leaf out in April.

Winter pruning is analogous to pouring the foundation and framing the house: it creates the tree's structure, form, and extent. Summer pruning is all about "finish work": trim, tile, cabinetry, etc. It refines form and keeps the interior of the tree open to sunlight, which is vital to fruit production. Remember that it takes >50% direct sunlight striking a branch to produce and maintain fruit buds.

Summer pruning can also induce fruit bud development on lateral branches and can actually hasten the time to fruit production on these laterals. Normally, a lateral branch will form and grow in Year 1. In Years 2 and 3 it forms fruit buds, eventually fruiting in Years 3–4. With well-timed summer pruning, sometimes Year 1 (current season's) lateral shoots can form fruit buds and even flower and fruit, and although the fruit won't mature that late in the season, you have formed a perennial fruit-bearing organ that will be productive for a number of years. At the very least, 1 Year laterals can be induced to form fruit buds that will bear by the following summer, or the one after that.

***Understanding the Physiological "Why's" behind Summer Pruning's Effects***

When you prune back a branch (using a cut called a heading cut, or simply "heading back") the branch responds by trying to regrow what was cut off. When a branch is headed back, the top remaining vegetative bud regrows the branch. The next 2–5 buds down the branch break from dormancy and form lateral branches that

*continues on page 2*

(if all goes well) will eventually bear fruit. Whether a branch is headed back in winter or summer, the pattern of the response is identical. However, the magnitude of the growth response is radically different.

Dormant (winter) pruning is invigorating, that is it induces rapid extension growth in the following growing season. The reason for this is that trees store carbohydrates, garnered in late summer through photosynthesis, in their wood (principally in the trunk's bark). These resources are mobilized for growth and fruiting the following summer. Although winter pruning reduces a tree's volume by removing wood, it doesn't significantly diminish the stored carbohydrate reserves.

By heading back, or shortening branches, the tree exhibits stronger growth through a lesser number of outlets (buds=outlets) and thus grows longer branches. It is absolutely proportional: the harder you cut back a 1-year-old shoot in winter (on pome fruits) the longer it grows in summer.

Consequently, you make heavy/hard heading cuts on a young tree to grow its extent and form. As a tree matures and fills its allotted space, you reduce both the number and magnitude of heading cuts.

In contrast, summer pruning is dwarfing or deinvigorating for several reasons:

In summer, leaves engage in photosynthesis and produce carbohydrates. The tree translocates those carbohydrates throughout to grow roots, shoots, leaves, and fruit. By removing leaves during summer pruning you remove a resource point and thus reduce energy for overall tree growth or regrowth. In the internal battle for resources, fruit usually acts as a strong resource "sink": it can sequester >70–80% of a tree's resources annually (which is one reason to fertilize your trees every year).

Thus by late summer, when summer pruning occurs, the tree has already allocated most of its reserves to existing branches, roots, and fruit; it is essentially "tapped out," with inadequate resources (or enough summer season) left to add more than a few inches of regrowth on a pruned branch.

In addition, summer pruning of laterals on pome fruits releases ethylene gas at the site of the pruning cut. Ethylene is a gaseous hormone/growth stimulant. This released ethylene gas saturates the tree canopy, particularly the summer-pruned laterals. And although the causative mechanism is still unknown, it is thought that flooding the tree canopy with ethylene stimulates fruit bud formation, rather than vegetative branch extension.

So, the dividends of summer pruning include:

- Tree height reduction and more sunlight (via thinning cuts) in interior of the canopy, which promotes fruit growth and ripening
- Minimal regrowth of pruned branches (and thus the size of the tree is controlled)
- Rapid induction of fruit buds
- A thickening and strengthening of the pruned laterals, making them better able to bear fruit without breaking

Matthew Sutton, owner of Orchard Keepers, teaching a summer pruning class at the UCSC Farm.

### *Summer Pruning Tips*

Timing

Summer pruning is best done in August–September, when the majority of branches have set a terminal bud. Note that when branches are actively growing, their tips feature a vegetative bud that continues to produce leaves and lengthen. This is visible—you see new leaves forming at the tip of a branch. When a branch has stopped growing for the season, it sets a fat terminal bud (often the beginning of a fruit bud) and will grow no more that year. It has physiologically shut down for the season and pruning does not stimulate regrowth (or at least not much).

When actively growing, 1-year-old laterals feature at least 1 foot of new growth and have an audible snap when broken at the base.

How to treat lateral branches

Vigor: When deciding which laterals to keep and which to thin (remove), keep the laterals of moderate or weak vigor (yes, a seeming oxymoron). Overly vigorous laterals tend to grow too long and shade adjacent branches. Their hormonal "impulse" is to be non-fruitful.

The best policy is to completely remove upright and vigorous laterals. Keep weaker ones that are growing at an angle approaching horizontal and train them perpendicular (90°) to the primary branch. This can be done with string or V-notched lathe spreaders. Based on this approach, the options for treatment of laterals are the following:

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# Summer/early Fall Calendar

## Selecting, Growing & Arranging Cut Flowers

*Saturday, July 19, 9:30 am – 12:30 pm*
*Alan Chadwick Garden, UCSC*

Join flower growers Melissa Betrone, Sky DeMuro, and Molly Dillingham to learn how to select, raise and arrange cut flowers from your garden to create beautiful bouquets. The workshop will include both lecture and hands-on practice as you make a bouquet to take home.

Cost of the workshop is $30 for Friends of the Farm & Garden members (pre-registered) or $40 (at the door), $40/$50 general admission; $25/$35 UCSC students and limited income. Cost includes $10 materials fee.

Pre-register online at flowerclass.bpt.me, or pay at the door with cash or check.

## Summer Pruning Workshop

*Saturday, July 26, 9:30 am - 12:30 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 Matthew Sutton of Orchard Keepers and Sky DeMuro of the Alan Chadwick Garden. Wear comfortable shoes, sun protection, and bring a snack. Cost of the workshop is $20 for Friends of the Farm & Garden members (pre-registered) or $30 (at the door), $30/$40 general admission; $25/$35 UCSC students and limited income.

Pre-register online at summerprune.bpt.me or pay at the door with cash or check.

## Docent-Led Tours of the UCSC Farm

*Sundays: August 3, September 7, October 5*

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. Free parking, no reservations required.

For directions to the UCSC Farm, see casfs.ucsc.edu/about/directions.html

## Fall Gardening Workshop

*Saturday, August 23, 9:30 am – 12:30 pm*
*Alan Chadwick Garden, UCSC*

Orin Martin and Sky DeMuro of the Alan Chadwick Garden will teach you about the varieties that grow well in the fall and winter, and how to direct seed into the garden and sow seeds in the greenhouse. Wear comfortable shoes and be prepared to get your hands dirty as you sow a six-pack to bring home. $20/$30 for Friends' members; $30/$40 general admission; $15/$25 UCSC students and limited income. Pre-register online at seedsowing.bpt.me or pay at the door with cash or check.

## 4th Annual Farm-to-Fork Dinner

*Sunday, September 14, 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. For tickets, see specialevents.ucsc.edu/farmtofork/index.html, or call 831.459-5003.

## Grow Your Own Compost: Cover Crops in the Home Garden & Orchard

*Saturday, October 4 , 9:30 am – 12:30 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. Pre-register online at covercrops2014.bpt.me or pay at the door with cash or check.

## Fall Harvest Festival at the Farm!

*Sunday, October 12, 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.

*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.*

## Applications Open for 2015 Apprenticeship Program

In April 2015 the UC Santa Cruz Farm & Garden will welcome its 48th class of aspiring organic farmers and gardeners as participants in the Apprenticeship in Ecological Horticulture, the longest-running university-based organic farmer training program in the U.S.

Applications are now open for the 2015 Apprenticeship program, with a range of scholarship support available, including the Simply Organic annual scholarship and funding from the USDA's Beginning Farmer & Rancher Development Program. GI Bill and AmeriCorps funding can also be used to cover tuition costs.

The six-month, full-time residential program is based at the 30-acre organic farm and 3-acre Alan Chadwick Garden on the UC Santa Cruz campus. The program trains adults in the concepts and practices of organic gardening and small-scale organic farming and marketing, using a combination of hands-on, experiential learning, classroom lectures, working in the greenhouses, row crop fields, gardens, and orchards, and field trips to farming and urban agriculture operations.

The Apprenticeship is managed by the Center for Agroecology & Sustainable Food Systems at UCSC, and is offered through UCSC's Extension Program. It is open to all participants 21 years or older, regardless of educational background.

Program information, application materials, and details on scholarship support are available online at http://casfs.ucsc.edu/apprenticeship.

Application deadlines for the 2015 program are August 15, 2014 for international applicants, and September 30, 2014 for U.S. citizens.

## *New Trees at UCSC Farm & Chadwick Garden Honor Frank Cirbus*

This winter saw plantings of new pear and apple trees take place at the UCSC Farm & Alan Chadwick Garden. The group of second-year (advanced) apprentices from the Farm & Garden teamed up with undergraduate interns and with instructors Orin Martin, Liz Milazzo, Damian Parr, and Darryl Wong to plant the new trees.

The tree purchase was supported by Lisa Sloan, professor of Earth and Planetary Sciences, in honor of her late father, Frank Cirbus. Plaques marking the plantings as "Frank's Orchard" will be placed in the new pear and apple orchards. We thank Lisa for her generous and thoughtful gift, and will report more on this new project in the next issue of the *News & Notes*.

## Help Harvest for the New Farm to Family Project to Support the Campus Food Pantry

Farm to Family is a new collaboration amongst apprentices and staff of the UCSC Farm, the Center for Agroecology and Sustainable Food Systems (CASFS), and UCSC's Family Student Housing.

Family Student Housing offers a Community Food Pantry from 4 pm–6 pm, on the first and third Wednesday of each month, in connection with Second Harvest Food Bank. The Food Pantry is now able to expand its produce selection with fresh organic vegetables and fruits from the CASFS Farm at UCSC.

The CASFS Farm team invites students, families, and other community members to enjoy the experience of harvesting produce directly from the field, including lettuce, beets, carrots, potatoes, chard, and spinach. No experience necessary, children are welcome.

Upcoming harvest dates are: August 6 and 20, September 3 and 17, and October 1 and 15, from 7:30 am–8:30 am, with additional harvests on August 20, September 3, and September 17 from 1 pm–3 pm. Meet at the packing shed next to the row crop fields, in the middle of the UCSC Farm.

## Grants Support Agroecology Education and Recruitment, Apprenticeship Training

A $10,000 grant from Driscoll's Charitable Fund of the Community Foundation for Santa Cruz County will support the Center for Agroecology & Sustainable Food Systems' (CASFS) and the Environmental Studies Department's undergraduate educational programming in agroecology and sustainable food systems.

The funds will aid in efforts to recruit non-traditional and underrepresented students into agricultural pathways. Driscoll's grant will advance our current USDA-funded recruitment efforts, in partnership with Santa Cruz and Monterey county-based non-profit organizations and campuses that serve underrepresented high school and community college students. The funding will help CASFS and the Environmental Studies Department build and strengthen an educational "pipeline" that supports youth who are pursuing careers in our regional agricultural community.

Two grants from the Newman's Own Foundation totaling $50,000 will support the CASFS Farm and Garden and the Apprenticeship Program in the coming year. We are grateful for the long-standing support of the Newman's Own Foundation for the training of new organic farmers and gardeners at CASFS.

# Endowment Gift Will Support Apprenticeship Training Program

A $4-million gift to the University of California, Santa Cruz will establish an endowment to support the Apprenticeship in Ecological Horticulture, the nation's first hands-on training program for beginning organic farmers at a public university.

The Apprenticeship is one of the core programs of the Center for Agroecology and Sustainable Food Systems (CASFS) at UC Santa Cruz and has earned an international reputation for the skill and knowledge of its instructors and researchers for more than 45 years.

This gift, from an anonymous donor, is the first step in building a $10-million endowment that will ensure the Center's long-term productivity and impact. "The Center for Agroecology and Sustainable Food Systems at UC Santa Cruz is the nation's leading university program in sustainable agriculture and food systems," said Daniel Press, CASFS executive director and the Olga T. Griswold professor of environmental studies. "This generous gift will help ensure that it continues to be." The endowment's annual payouts of about $160,000 will be used for salaries, educational expenses, materials and equipment.

Founded in 1967, the Center operates the three-acre Alan Chadwick Garden and the 30-acre UC Santa Cruz Farm, which serve as research, teaching, and training facilities. Each April, a new crop of apprentices comes to UC Santa Cruz to live and work on the Farm for six months. This year's 39 first-year apprentices hail from across the country and bring with them a variety of life experiences. They are united by a single passion: to learn how to produce healthy food for their communities and empower others to do so as well.

***Program Combines Classroom and Experiential Training***

Apprentices receive approximately 300 hours of classroom instruction and 700 hours of in-field training and experience in greenhouses, gardens, orchards, and fields. In addition to learning soil science and a comprehensive suite of organic farming and gardening skills, apprentices also study business practices and direct marketing techniques for small farmers. And they gain a conceptual grounding in social and environmental issues in agriculture.

The program now boasts nearly 1,500 graduates who have established their own commercial farms and market gardens, organized and run community gardens for inner city and prison populations, and developed school gardening programs. Many graduates take part in international development projects, including programs in Nepal, Uganda, Kenya, South Africa, and throughout Central and South America. Others have raised the standards of the organic food industry through work with certification programs and retailers.

***Center Plays Many Roles in Education, Research and Outreach***

The Center and Farm and Garden also serve thousands of UC Santa Cruz undergraduates through more than 30 classes; plus internships, service learning, and campus events. Hundreds of community members visit the Farm each year for organic gardening workshops, events, and tours. An on-site affiliate, Life Lab, uses the Farm for K–12 school tours, teacher trainings, summer camps, and the "Food What?" youth empowerment program. Finally, the Center advances both theoretical and applied research. Researchers working with CASFS are at the forefront of efforts to develop and advance sustainable food and agricultural systems that will serve as a foundation for future generations.

*–Guy Lasnier*
*UCSC News Service*

The endowment gift to the Center for Agroecology & Sustainable Food Systems (CASFS) will provide ongoing funding for the Apprenticeship training program, based at the UCSC Farm and Alan Chadwick Garden. We send our heartfelt thanks for this amazing gift for the Apprenticeship from everyone at CASFS.

# When Should I Water?

In this summer of drought and regional water restrictions, it's more important than ever to be aware of your plants' water needs. This list of watering recommendations used at the UCSC Farm offers advice on how frequently and at what stage various crops should be irrigated to maximize the effectiveness of the water you apply.

A note on root depths used in the list: shallow roots are those that extend 6 to 24 inches deep; moderate roots, 24 to 40 inches, and deep roots—more than 40 inches.

**Arugula:** Frequent shallow water to maintain flavor and succulence and support rapid growth. Shallow root depth.

**Asparagus:** Water deeply and infrequently. Allow to dry down between watering. Deep root depth.

**Basil:** Somewhat thirsty. Important to water prior to harvest.

**Beans, fresh:** Can drink lots of water because they are fast growing. Once fruit is set, can often "finish" the crop with less or no water to enhance flavor. Vulnerable to disease with overhead water. Medium root depth.

**Beans, dry:** Treat as fresh beans until seeds begin to mature, then gradually cease application of water. Shallow root depth.

**Beets:** Give adequate supply of water as lack thereof during warm weather causes plants to bolt or beet roots to crack and become tough and woody. Medium root depth.

**Broccoli:** Commercial growers use 1–1 1/2" per week. Shallow root depth. Extra water during crown development will add bulk to the harvest.

**Brussels Sprouts:** Not very efficient at water uptake so require evenly moist soil to function at best. 70–80 percent of the roots are concentrated in the top 8–12" of soil.

**Cabbage:** Need even moisture or heads will crack. Shallow root depth. Not very efficient at water uptake.

**Carrots:** Need deep watering until later stages of root development, at which time excess water can cause roots to crack. Cracking is also caused by too great a fluctuation between wet and dry. Medium root depth.

**Cauliflower:** Keep soil evenly moist. Shallow root depth.

**Celeriac:** Thirsty like celery, but more tolerant of wet/dry swings. Shallow root depth.

**Celery:** Thirsty. Shallow rooted so needs frequent irrigation to get well established. Don't overhead water because susceptible to fungal disease. Heavy feeder. Shallow root depth.

**Chard:** Likes moist roots, bolts from water stress. Medium root depth.

**Napa Cabbage:** Keep ground moist. Shallow root depth.

**Cilantro:** Keep moist to forestall bolting. Shallow root depth.

**Corn:** Adequate moisture is critical from tasseling through kernel formation and harvest. Shallow root depth. Do not overwater dry corn (like popcorn and ornamental) at maturity… let it dry out on stalk.


Potatoes require even moisture as the tubers enlarge. To cure the skin, cut back on water when the vines begin to die.

**Cucumbers:** Shallow to medium root depth and sensitive to disturbance. Needs consistently moist soil, watered at base. Susceptible to fungal disease spread through wet leaves. Lack of water when fruits are developing will cut down on production.

**Eggplants:** Need sufficient moisture. Will always benefit from supplemental fertility. Medium root depth.

**Fennel:** Likes adequate moisture but not demanding. Medium root depth.

**Flowers:** Water needs vary by species. Generally important to supply regular water during bud formation and flowering.

**Garlic:** Likes steady supply of water. Stop watering several weeks before harvest to reduce succulence and therefore reduce rot during drying. Shallow root depth.

**Kale:** Medium root depth. Average water needs, except during warm weather when more water is required to prevent wilting.

**Kohlrabi:** Must have even moisture to be tender. Shallow rooted.

**Leeks:** Never let the soil dry out. Shallow root depth.

**Lettuce:** WATER CONSISTENTLY to avoid bitter taste. Shallow root depth.

**Musk Melons:** Like a constant supply of moisture. Susceptible to foliar disease, so avoid overhead watering. Medium root depth.

**Onions:** Steady supply of moisture; if too dry, onions get a strong unpleasant flavor. Avoid water on leaves to minimize downy mildew. Shallow root depth.

*continues on next page*

**Parsley:** Somewhat thirsty. Shallow root depth.

**Parsnips:** Water lovers. Deep root depth.

**Peas:** Need adequate moisture at flowering and pod enlargement. Avoid water on leaves to minimize mildew. Medium root depth.

**Peppers:** Constant and even moisture from flower through fruit. Peppers like to dry down before being watered again. Will always benefit from supplemental fertility. Medium root depth.

**Potatoes:** Even moisture. This is especially critical during period of tuber enlargement, which begins at blossom. Cut back on water as vines die back, to cure the skins. Shallow root depth.

**Pumpkins:** Can water deep and infrequently. Deep root depth.

**Radishes:** Need adequate moisture -- dry soil results in tough, woody radishes, and vulnerability to flea beetles. Moisture swings cause cracking. Shallow root depth.

**Rutabaga:** Provide even moisture. Roots will become tough as a result of the development of extra xylem cells if always forced to bring water up from a deep soil level.

**Salad Mix:** Water consistently for succulent growth and to avoid bitter taste. Shallow root depth.

**Spinach:** Keep evenly moist to forestall bolting. Shallow root depth.

**Summer Squash:** Rapid growth and ongoing fruit production requires frequent deep water. Medium root depth.

**Tomatoes:** Tomatoes like to dry down before being watered again. When blossoming begins, keep soil moisture a little bit drier. Imbalances of moisture may lead to blossom end rot and fruit cracking. Deep root depth.

**Turnips:** Roots will become tough as a result of the development of extra xylem cells if always forced to bring water up from a deep soil level. Medium root depth.

**Winter Squash:** Do well with deep and infrequent waterings. Avoid overhead water to prevent foliar disease. Deep rooted.

### Thanks to our Sustaining Sponsor!

Many thanks to Jacobs Farm/Del Cabo, for becoming a Sustaining Sponsor as part of the Friends of the Farm & Garden's new Business Affiliates Program.

Jacobs Farm/Del Cabo grows over 60 varieties of organic herbs and edible flowers on its northern California coastal farmlands. You can learn more about Jacobs Farm/Del Cabo at www.jacobsfarm.com.

To learn more about the Business Affiliates program and its benefits, contact Anne Hayes at (831) 502-7274, or send email to adhayes@ucsc.edu.

# 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., farming, teaching, and developing urban agriculture programs. Here are some updates on a number of our alumni:

**Onika Abraham** (2012) is the new director of Farm School NYC (www.justfood.org/farmschoolnyc) in New York City, taking over the job from fellow Apprenticeship graduate **Jane Hodge** (2010), who is now farming on Staten Island.

**Celia Barss** (2002), who runs Woodland Organics in Winterville, Georgia, was awarded the 2014 Land Steward award from Georgia Organics. "This year's honoree is a true leader and teacher today, not because she has sought those roles, but because she knows the direction to go and has so much knowledge to share," said Daniel Parson of the farm at Oxford College-Emory University, who presented the award.

**Stephen Decater** (1967) and his wife **Gloria's** Live Power Farm in Covelo, California (www.livepower.org) was featured in an article in the Ukiah Daily Journal. The farm grows for more than 300 families living in Willits, Ukiah, and San Francisco, and serves as a Mentor Farm for the North American Biodynamic Apprenticeship Program.

**Suzi Grady** (2009) and **Lennie Larkin** (2011) were interviewed by the Petaluma mayor David Glass about their work at Petaluma Bounty, an urban organic farm that grows food for limited-income residents of Petaluma. You can see the interview at http://vimeo.com/95921878.

**Danelle Myer** (2010), who started One Farm in Logan, Iowa (www.one-farm.com), was recently profiled in a Yahoo.com article, "Small Farms Making Big Impact in U.S. Agriculture."

The ducks on **Daniel Paduano's** (2006) Abounding Harvest Mountain Farm (aboundingharvest.com/AHMF.html) were the subject of a story on National Public Radio, which reported on the growing popularity of backyard ducks and duck eggs.

**Emily Parsons** (2011) is the farm manager at Soquel's Everett Family Farm (www.everettfamilyfarm.com), which was featured in a San Francisco Chronicle article on "Growing More Than Just Crops at Everett Family Farm." The article describes how Everett has become an "incubator" farm for several groups of Apprenticeship graduates, many of whom have gone on to start their own farms.

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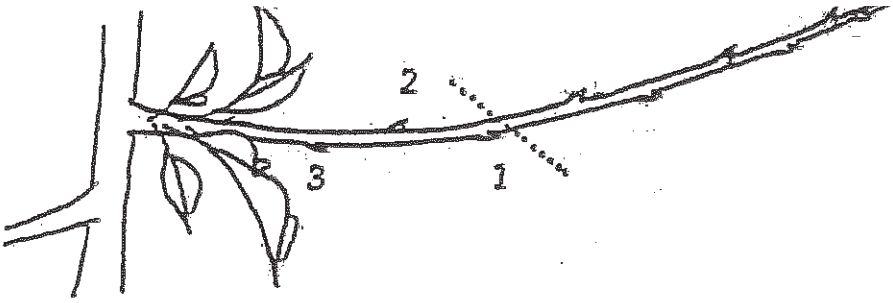
*Summer Fruit Tree Pruning – from page 2*

• If they are short (<8–9″) and flat (45º above horizontal or flatter) leave them alone. They will probably stop growing and start fruiting of their own accord. I refer to them as "self-managing laterals." And life would be a lot sweeter (literally as well as figuratively) if all laterals were of this nature and if one occurred every 7–9″ on main limbs.

• If they are of moderate vigor, train them down toward horizontal. They will suffice.

• If they are longer and more vigorous, summer prune them (see below).




When summer pruning laterals, cut back to three buds of new growth above the cluster of leaves growing at the base of the lateral.

Orientation and positioning

• Laterals should be thinned so that they are spaced approximately 7–9″ apart on a primary branch

• They should be positioned at an angle of 45º to horizontal, and perpendicular (90º) to the primary branch (use strings, stakes and spacers to adjust them as needed)

Pruning

Do not prune laterals in winter. This will cause them to grow vigorously and branch, leading to crowding and shading, and thus reducing both quality and quantity of fruit.

If longer than 8–9″ laterals may be summer pruned:

Identify current season's growth and prune it back to 3 buds of new growth. Ideally, the top bud will resume growth and extend, but minimally so. The next 2 buds may initiate fruit buds and bear within a year. This is referred to as the 3 bud system, based on the methodology of Louise Lorette, a French orchardist and nurseryman of the early 20th century.

A more general approach to summer pruning of laterals is non-specific: simply cut back laterals as per what fits between primary branches (<10–12″ long). An added benefit of cutting back laterals is that they will be shorter and thus thicker and better able to support the weight of the fruit without sagging or breaking.

To learn more about summer pruning, join Matthew Sutton of Orchard Keepers and Sky DeMuro of UCSC's Alan Chadwick Garden on Saturday, July 26th, from 9:30 am–12:30 pm at the UCSC Farm. They'll discuss and demonstrate how to control and reduce tree height, talk about the "summer care package" for fruit trees, and show you how to prune laterals on pome fruits to shape the tree and induce fruit production. Bring your questions!

*Pre-register for the summer pruning class at summerprune.bpt.me, or contact us, (831) 459-3240 or casfs@ucsc.edu, for more information or to pre-register by check.*