



News & Notes of the UCSC Farm & Garden

Issue 120, Winter 2009

Selecting and Planting Bare Root Fruit Trees

– Orin Martin

Note to Readers

I parlayed my class notes from the “Getting Started with Fruit Trees” workshops (January 10 and January 17, 2009) into this article. The aim here is to lay down some of the “tenets of success” . . . As you will see, the actual planting of the tree is only one of a number of critical decisions and procedures (albeit an important one) within the odyssey of fruit growing. Here’s wishing you a strong breeze and smooth sailing in that regard.

Tree Sources

There are four primary sources of trees: Graft or bud your own; local retail nurseries; mail order nurseries, including small-scale and large “industrial strength”-scale nurseries; buy an orchard!!! Here I’ll address the retail and mail order options.

Unless you are buying fruit trees in quantity or looking for either rare heirloom varieties or unusual scion/rootstock combinations, buying retail has some advantages over mail order. Retail shopping allows you to inspect and accept or reject individual trees (see below for Selecting Quality Trees). Quite often, retail prices are on a par with or even cheaper than mail order costs. This is especially true if purchasing either a few trees or one or a few trees within a variety/rootstock combination.

Mail order tree nurseries fall into two large categories: Large-scale conventional nurseries, e.g., Vanwell, C & O, Columbia Basin, Dave Wilson; and small-/medium-scale nurseries, some—lamentably only a few—organic, some conventional, e.g., Raintree Nursery, Trees of Antiquity (organic), Sandy Bar Nursery (organic).

The large-scale nurseries offer several “perks” –

- Economies of scale, with hundreds of thousands of trees.
- A good range of size-controlling rootstocks for each species of fruit (apple, pear, peach, etc.) from mini dwarf to standard or full size.
- Cheap prices meshed with superlative tree quality. These companies will usually sell the backyard orchardist as few as 1 or 2 trees, \$12–14/tree. If you buy 25 of one kind you can bring the per-tree price down to \$6–9.

On the flip side, large nurseries often carry a limited varietal selection—usually the varieties are those currently in vogue for large-scale commercial production and include very few if any heirloom varieties

In contrast, small-/medium-scale nurseries usually offer a diversity of varieties, essentially the best of the modern production varieties and a wealth of heirlooms. However, they usually have an extremely limited selection of rootstock types. The tree quality is variable, nursery to nursery, species to species, and year to year. The prices usually make you say “ouch!”; with no discount for volume, expect to pay \$25–35/tree.

Selecting Quality Trees

A primary tenet of success is to plant a large “quality tree” and then to grow it aggressively. A bigger tree has greater leaf surface, thus more photosynthetic grow power, and will establish more quickly than a smaller tree. The old adage was, plant a whip (a whip is an unbranched tree) not a branched tree, but no more—plant a big, branched tree. It’ll get you out of the chute and down the road quicker.

When choosing a tree, things to select for include –

- A root system that is proportional to the branch system. Keep in mind that good proportions, in that regard, have the appearance of being way out of balance (in favor of branches) to the novice.

continued on page 2

- A good number of and good length of branches (5–9 over 2' long)
- A tall tree (4–7')
- Good branch distribution—both vertically and horizontally. Branches with a minimum of 5–6" vertical spacing are ideal. Such spacing achieves two aims –
 - Sunlight distribution within the tree canopy, both in the early years but especially at maturity. Fruit trees require 50–80% direct sunlight striking a branch to manufacture fruit buds and good quality (taste and nutrition), good-sized, well-colored fruit. You can easily move or train a young branch up to 180°.
 - Branch strength and vigor. If two or more branches emanate from the same vertical point on the trunk, one tends to be strong and one weak. The strong one is dubbed a choker branch—big pig, little pig syndrome. Good spacing of branches, coupled with moderately wide crotch angles (point of attachment to trunk) yields mechanically strong, vigorously growing branches. The ideal branch angle is 30–60° (above flat). Narrow angles beget overly vigorous growth at the expense of fruit and a tendency to snap and break at maturity. Conversely, flat-angled branches tend to be weak and become serious saggies that crowd and shade branches below.
- A thick caliper trunk over 1 1/2—7/8"

Caliper refers to the girth or circumference of the trunk at or about the bud union at the base of the tree. Trees over 1 1/2" up to 7/8" caliper are recommended. The notion of saving a few dollars by planting a small caliper tree is a mistake. Studies by Dr. Bruce Barritt of Washington State University have shown that by the fifth year (fifth leaf as the grower jargon goes) a 7/8" caliper tree produces 30% more fruit than a 1 1/2" caliper tree and almost 50% more fruit than a 3/8" caliper tree. While a larger caliper tree may cost slightly more at purchase time, the cost difference is soon recouped via early and efficient cropping.

The law of diminishing returns kicks in with tree caliper over 7/8", that is, there's nothing wrong with it, it just doesn't pay the dividend of more fruit sooner.

The same yardstick can be applied to the addition of compost to your soil. More is better up to a certain point. The "teen idol" musician John Meyer sums it up succinctly and poetically with the lines, "Twice as much ain't twice as good and can't sustain what one half could . . ." from the song *Gravity*. Although he was probably intoning about matters of the heart and not sustainable agricultural practices, good education and learning are really about transference after all. So yes, rock 'n roll informs one's learning and teaching.



Jeff Rosendale

Orin Martin describes the attributes of a quality bareroot tree to a workshop audience at Sierra Azul Nursery & Gardens.

Digging and Prepping the Planting Hole or "The Almighty Hole"

The old gardening quip, "Don't put a five dollar tree in a fifty cent hole," needs to be adjusted for inflation: "Don't put a \$20 tree in a \$2 hole." Use common sense, or activate your "horticultural sensibilities." What is the native soil like? Ask and answer the question, "Should I be planting fruit trees in this ground now?" If the soil is not fertile enough –

Get a soil test. It provides a quantifiable base line as per what is and what isn't in your soil, organic matter content, macro, micro nutrients, pH, C.E.C., etc. With the exception of nitrogen, if a nutrient is deficient you need to add it to your soil to counteract deficiencies. There is no alchemy in soil science; you can't make somethin' from nothin'. Nitrogen, of course, can be fixed via the symbiotic (actually it's been reclassified as a "facultative, parasitic" relationship—sounds yucky; symbiotic has a much more positive, poetic ring to it) relationship between certain soil bacteria (*Rhizobium* spp.) and nodules (housing) formed on legume roots (bell beans, vetches, clovers, etc.). Hey it's free nitrogen from the earth's atmosphere (79% Nitrogen).

Engage in a rigorous soil building program (1–3 years; but see the "multi-year hole," page 7, for ways to speed the process), components of which should include but not be limited to –

- deep or double digging
- a legume, grass cover crop that is green manured into the soil. It is possible to do this 3–5 times in one calendar year.

continued on page 7

late Winter/early Spring Calendar

Fruit Tree Grafting Workshop

*Saturday, February 28, 1–4 pm
Live Oak Grange, 1900 17th Ave, Santa Cruz*

Taught in collaboration with the California Rare Fruit growers, this hands-on workshop will cover the basics of grafting fruit trees. Come “make and take” a fruit tree! \$15 for Friends members; \$20 general public; free for members of the California Rare Fruit Growers.

Raising Chickens (& Ducks!) in Town

*Sunday, March 15, 10 am - 1 pm
Louise Cain Gatehouse, UCSC Farm*

Learn how to raise and care for chickens and other poultry in an urban environment. Taught by Paul Glanowski and Cooper Funk, founders of “Urban Eggs,” this workshop will cover the basics of tending small flocks in town, including coop design, breeds, and disease and predator control. Bring a snack. \$20 for Friends members; \$25 general public.

Starting Your Garden from Seed

*Saturday, March 21, 10 am - 1 pm
Louise Cain Gatehouse, UCSC Farm*

Celebrate the start of spring! Gardening instructor Trish Hildinger leads this lecture and hands-on class designed for beginning and intermediate gardeners who want to learn how to start vegetables and flowers from seed. Wear comfortable shoes and bring a snack. \$15 for Friends members; \$20 general public.

Friends’ Apprentice Reception

Friday, April 17, 5 pm - 7 pm UCSC Farm

Join us in welcoming the class of 2009 apprentices to the UCSC Farm & Garden as they begin their six-month training course. Light refreshments will be served; potluck items are welcome. Please RSVP to 459-3240 or jonitann@ucsc.edu, by April 15.

Planning and Planting the Spring Garden

*Saturday, April 25, 10 am - 1 pm
Louise Cain Gatehouse, UCSC Farm*

Join Chadwick Garden manager Orin Martin and a team of gardening pros to learn how to choose appropriate varieties, and improve and prepare the soil for spring planting. Wear comfortable shoes and bring a snack. \$15 for Friends members; \$20 general public, payable the day of the workshop. This is a great way to prepare for the Farm & Garden’s Spring Plant Sale the following weekend, May 2 and 3!



Also coming up ...

Spring Break Day Camp at Life Lab

*Monday through Friday, April 6 – 10, 9 am – 1 pm
Life Lab Garden Classroom, UCSC Farm*

Children ages 7 – 11 are invited to join us on the UCSC Farm for spring gardening, cooking, and crafts. We’ll be preparing food fresh from the farm. Gardening activities will include seed sowing for home gardens, composting, and harvesting. Garden-based crafts and games will round out this exciting week of camp. Pre-registration required. Call 831.459-4035 for details, or see the Life Lab website, <http://www.lifelab.org/index.php?page=camp>. \$230 camp fee; sibling discount available.

Arboretum’s Spring Plant Sale

Saturday, April 18, 10 am – 12 noon (members), 12 noon – 4 pm (general public) Arboretum’s Eucalyptus Grove

Held with the plant sale of the California native Plant Society in the Arboretum’s Eucalyptus Grove, at the intersection of High St and Western Drive. Memberships to both organizations will be available at the gate on the day of the sale. A list of plants available at the sale will be available online at <http://www2.ucsc.edu/arboretum/calendar.html> by April 11.

If you’d like more information about these events, need directions, or have questions about access, please call 831.459-3240, email jonitann@ucsc.edu, or see our web site, casfs.ucsc.edu. Please note that we cannot accept credit card payments for classes or merchandise (cash or check only). No pre-registration or reservation required for workshops, unless noted.

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

Ceanothus

David Fross & Dieter Wilken
Timber Press, 2006

– Reviewed by Sue Tarjan

David Fross, founder of Native Sons Nursery in Arroyo Grande, California, and lecturer at Cal Poly, San Luis Obispo, has teamed up with Dieter Wilken, botanist at the Santa Barbara Botanic Garden in charge of programs and collections and adjunct professor at UC Santa Barbara, to produce a must-have book for all you *Ceanothus* enthusiasts out there. Whether you call these attractive and easy-to-grow natives *Ceanothus*, California lilac, wild lilac, mountain lilac, blue-blossom, or buckbrush, they are undoubtedly among the most eye catching plants in the state, featuring a wide array of true blue to violet and purple flowers with a few whites and pinks to boot. Some are scented as well and beloved by pollinators of all descriptions.

From trees to groundcovers, there is at least one *Ceanothus* for every gardener. Among other things, this book will help you sort out which ones will thrive in your garden. The book is divided into two parts. The first part covers natural distribution, history of cultivation, growing tips, diseases and pests, cultivars, propagation, species and cultivars for the garden and landscape, and a selection guide.

The second part discusses *Ceanothus* in the wild and explains how *Ceanothus* species fit into the natural ecology of their habitats. The book is amply illustrated (my favorite captures a gorgeous specimen climbing up a stone wall in England) and provides a very useful glossary, bibliography, and index.

American Pests: The Losing War on Insects from Colonial Times to DDT

James E. McWilliams
Columbia University Press, 2008

– Reviewed by Sue Tarjan

Part historical account and part cautionary tale, this fascinating book argues that insects are a permanent and necessary part of the natural environment we must learn to live with because we cannot destroy them. Indeed, McWilliams argues that our misguided attempts to do so jeopardize our own existence as well.

His central premise is that the settlers who fanned out across the continent to tame the wilderness and its wildlife attempted to control the environment but continually undermined that control by seeking to achieve unrealistic economic goals through agricultural expansion. In other words, greed for continually increasing production and profits turned sustainable and ecologically diverse family farms into vast and vulnerable

continued on page 12

Sign Up Now for the 2009 CSA Season!

By becoming a shareholder in the Farm & Garden Community Supported Agriculture (CSA) project, you'll receive a box of fresh-picked, organically grown produce each week while supporting the Apprenticeship training program and establishing a partnership between the local community and apprenticing organic growers.

Shares for the 22-week season cost \$440. A share is designed to feed a household of two or three for a week, or a larger family that perhaps doesn't cook every day but still wants to eat fresh, organic and locally grown produce. Payment can be in full or divided up into two or four installments. There are also shares available for low-income households at half the cost of a regular share. Pickups on the UCSC Farm start in early June (weather permitting).

CSA members can also look forward to weekly newsletters with recipes, farm updates, and events; complimentary membership to the *Friends of the Farm & Garden* for one year; a 10% discount on plants and merchandise at our bi-annual plant sales; and quarterly issues of the *News & Notes*.

If you'd like to receive our CSA Brochure and Pledge Form or have any questions regarding the CSA program, please contact Crystal Jensen or Liz Milazzo at 831.459-4661 or email farmcsa@ucsc.edu. More information and the CSA Brochure and Pledge Form are also available at <http://casfs.ucsc.edu/community/csap.html>.

New Business Sponsors for Friends

Thanks to two local garden businesses, Friends of the Farm & Garden members can enjoy a new benefit this year. Shop at Sierra Azul Nursery and Gardens, and the ProBuild Garden Center and receive a 10% discount on plant purchases. Sierra Azul is located at 2660 E. Lake Ave (Hwy 152) in Watsonville, across from the Santa Cruz County Fairgrounds. ProBuild Garden Center is located at 235 River St. in Santa Cruz. If you're interested in joining our business sponsor program, please contact Matthew Sutton at matthew@orchardkeepers.com.

Thanks also to Jeff and Lisa Rosendale, owners of Sierra Azul Nursery and Gardens, for hosting one of our "Fruit Tree 101" classes, and to the folks at ProBuild for hosting this winter's "Fruit Tree Q&A" session. We look forward to many years of fruitful work together.



Help Keep the Apprentices on the UCSC Farm

\$250,000 Needed for Apprentice Housing Funding by June 2009

For over 40 years, people from across the country and around the world have come to UC Santa Cruz to learn organic farming and gardening through the Apprenticeship Program of the Center for Agroecology & Sustainable Food Systems (CASFS). Interest in the program's unique training is at an all-time high, with a record 152 applications received last fall for the 38 positions in the 2009 Apprenticeship.

One very important element of the Apprenticeship has been the immersion learning made possible by a full-time residential program. For many years Apprentices have been invited to live in tents at the UCSC Farm during the six-month training, but **2009 will be the last season in which tents are allowed.** We now need to build official seasonal housing to replace the tents. Doing so this summer will allow the Center to continue to offer on-farm housing for apprentices in 2010 and beyond. It is also an excellent opportunity to secure the future of the residential Apprenticeship program for many years to come.

The campus administration has approved plans for eight 4-room cabins to house 32 apprentices by the cypress windbreak near the plum orchard at the Farm. Solar showers, paths and accessibility features, and all of the design and planning work, are also included in the project's total budget of \$677,000. Originally slated for completion last summer, the project was put on hold when construction bids came in 30% higher than campus planners had projected. After considering alternatives, we decided to move forward with the cabins even at this higher price because they still represent tremendous long-term value for the Apprenticeship. The up-front investment will yield benefits for decades by ensuring the program is as affordable and accessible as possible to a diverse range of trainees by providing free on-site housing at the UCSC Farm. *Equivalent rental or campus housing for apprentices would cost more than five times the total price of the cabins over the next 25 years!*

Our trainees are typically past college age and on their own financially. Many from disadvantaged backgrounds could not afford the program if they had to find housing in the high-cost rental market of Santa Cruz in addition to taking six months off from paid employment. Apprentices, graduates, and staff also speak highly of the educational value of living on the Farm. *"The foundational aspect of the experience is the immersion learning environment,"* says Senior Apprenticeship Instructor Orin Martin. *"It fuels the fire. Housing on site is essential."*

"Living where you're learning provides invaluable experience in farming and land stewardship," adds 1997-8 apprentice Don Burgett. "Observation of the fields and ecology is key to farming success, and it doesn't start at 8:00 am and stop at 6:00 pm weekdays. The type of deep

connections the apprentices make with each other and with the land wouldn't happen in a commuter program."

While planning for the shift away from tents over the last decade, the Center and Apprenticeship program have saved and allocated nearly \$300,000 for permanent apprentice housing. The Friends of the Farm & Garden board of directors committed \$16,000 of Back 40 income and long-term reserves for the project last year, as well as working with Center staff to give private donors the chance to contribute. To date Apprenticeship supporters have given over \$130,000 to help bring the housing to fruition.

Now we need to raise the final \$250,000 by June in order to complete the housing in time for the 2010 Apprenticeship. We have launched a major fundraising campaign to let a broad base of old and new supporters, foundations, and businesses know that **this is the most important way to support the Apprenticeship's training program right now.** The Friends board and Apprenticeship alumni are also helping to take this fundraising effort national with the Grow a Farmer Campaign (see related story, page 10).

Given the critical importance of meeting the June deadline to fund cabin construction this summer, the Friends board has also decided to make an unprecedented appeal to all Friends members for special donations to this project. Look for an appeal in the next few weeks in your mailbox, or go ahead and donate today!

For more information, just go to our website, <http://casfs.ucsc.edu> and click on Apprentice Housing Campaign under Announcements, or contact Ann Lindsey at (831) 566-3779 or alindsey@ucsc.edu.

To make a donation or pledge –

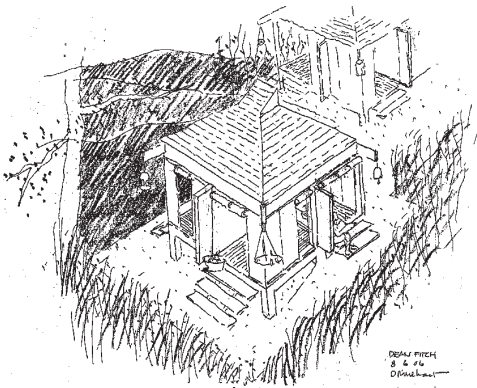
Use the payment form on page 6 of this issue. Checks should be made to the **UCSC Foundation** (with **Apprentice Housing Project** in the memo line) and mailed to: Apprenticeship Housing Gifts, CASFS/UCSC, 1156 High Street, Santa Cruz, CA 95064. You can also use the form to make a one-time or monthly credit card donation, or to make a pledge of support to the project.

Online donations can be made with a credit card by going to our website <http://casfs.ucsc.edu/about/support.html>. Under the "Support the Apprenticeship or Apprenticeship Housing Project" heading, click on "Make a donation online" and the UCSC giving form will appear. Make sure to write "Apprentice housing project" in the box that asks what you are specifically interested in supporting (rather than using the pull-down menu).

Thank you for considering lending your support to this important project. With your help now, we will look forward to seeing you at a groundbreaking in July! And to everyone who has already donated to this effort, all our thanks!

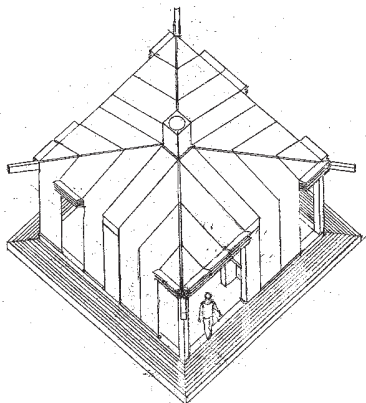
☐ **YES!**

I want to support the training
of future organic farmers and
gardeners with a gift to:



"About the Apprenticeship,
I always like to say, 'We teach
people to grow plants organically,
the applications are many and
varied.' To see the diversity
of activities that the former
apprentices are involved in is to
understand the transformative
efficacy of the program. The
students are stellar, the staff is
good, the ground is fertile. But
the foundational aspect of the
experience is the immersion
learning environment. It fuels
the fire. Housing on site
is essential. I'm asking you
to stoke that fire—Give!"

Orin Martin, Chadwick Garden manager



Thank you for your support!

The Apprentice Housing Project

☐ My donation check for \$_____ is enclosed.
Please make check payable to the UCSC Foundation

☐ Please bill my credit card for \$_____
\$25 is the minimum for credit card charges

☐ I want to make monthly credit card gifts of \$_____

for _____ consecutive months for a total gift of \$_____

Please charge my: ☐ Visa ☐ MasterCard ☐ American Express ☐ Discover

CARD NUMBER

EXP. DATE

AUTHORIZED SIGNATURE

☐ I want to make a pledge of \$_____.
Please contact me to discuss pledge payment options.

☐ I would like to receive an Apprentice Housing Project information
packet, including the architectural drawings and information on
naming opportunities.

NAME (please print)

ADDRESS

CITY

STATE

ZIP CODE

TELEPHONE

E-MAIL

NAME AS I WOULD LIKE IT TO APPEAR IN PUBLICATIONS (if different from above)

Questions? Please contact Ann Lindsey at (831) 566-3779 or
alindsey@ucsc.edu.

Please mail this form, along with your donation to:

Apprenticeship Housing Gifts

CASFS/UCSC

1156 High Street, Santa Cruz, CA 95064

Or pledge online at <http://casfs.ucsc.edu/about/support.html> and
click on Apprentice Housing.

Planting Fruit Trees (from p. 2)

- liberal application of compost with each digging of the soil
- the addition of mineral fertilizers to correct nutrient deficiencies, i.e. colloidal rock phosphate for phosphorous, green sand or granite dust for potassium, lime-calcium carbonate (CaCO_3) for calcium and to raise the pH or reduce acidity, etc.

Even with the most wretched of soils, an intractable adobe-like clay or a sieve-like, lifeless sand, 2–3 years of intensive soil building will catapult soil fertility and structure forward and yield a plantable soil.

The Planting Hole—Various Approaches

It is arguable as to whether even moderately fertile soil needs to be augmented with compost/fertilizer. If this is the case (determined by both a lab soil test and physical inspection and evaluation), simply digging a hole slightly wider and deeper than the (spread) root system (24–36" x 24–36") should suffice. Fertilization can be accomplished by simply top dressing with a 1–2" layer of compost worked lightly into the surface soil; 1/2–1 pound of concentrated organic granular fertilizer (Sustane 4-6-4 or Dr. Earth 7-4-2 applied with the compost in year 1 and year 2) will ensure meeting growth goals.

A slightly more aggressive approach would be to supplement the fill soil, excavated from the hole, with no more than 25–30% (by volume) compost. The fill soil and compost should be thoroughly mixed (homogenized) prior to refilling the hole. This approach will both improve soil structure and boost growth in years 1 and 2. Additional top dressing is optional. Note: If native soil has a heavy clay texture, slightly fracturing the sides of the planting hole as well as the bottom of the hole is advised.

An even more aggressive or radical "over the top" approach to hole preparation could be entitled "prepping the multi-year hole." This approach is time, labor and materials consumptive but has proved to work quite well over the years at the Alan Chadwick Garden at UC Santa Cruz.

This approach, which is for the impatient, salivating-to-eat-fruit-now crowd, is a way to take undeveloped soil, plant trees today (or tomorrow depending on the soil and your physical stamina or lack thereof) and simultaneously start using intensive techniques (referred to in rigorous soil building section, above) to improve soil outside the planting hole.

The multi-year hole approach is predicated on 1 foot per year extension of the tree roots beyond the planting hole (2' x 3'). For every year you think it will take to improve the native soil outside of the planting hole to accommodate good growth, then expand the hole by one foot. Thus if you project it will take 3 years to upgrade the native soil, expand the width of the hole excavated from 2' to 5'. It probably makes little sense to dig any hole



Orin Martin (left) and Matthew Sutton fill in the soil around a newly planted fruit tree at a "Fruit Trees 101" workshop this winter.

deeper than 3'. Most deciduous fruit trees (standard or dwarf) have a high percentage of their effective feeding roots in the top 1–2' of the soil. While they have "anchor" roots that go deeper, these roots are adept at "double digging" for themselves.

To prepare a "multi-year" hole –

- Dig a 3- or 4-year hole, literally 1 foot/year (beyond 2' x 3').
- Excavate the poor quality subsoil; discard 40%, and blend the remaining 60% with good garden soil (20%), and compost (20%).
- The top soil should be a blend of 60–70% native soil and 30–40% compost (premixed).
- Plant the tree, filling the hole with the improved subsoil, then finishing with the improved topsoil.
- Top dress with 1-2" compost and 1/2–1 lb. concentrated granular organic fertilizer.

Immediately start intensive double digging, adding of amendments and a cover crop-green manure program between trees. The goal is to diminish the differential between the improved hole soil and the unimproved native soil by the time the tree roots "arrive." This approach works well if you are a fruit tree zealot working on a garden scale, an endurance athlete looking for cross-training opportunities or are in possession of a backhoe.

It is worth noting that the "by the book," conventional wisdom (these days) is that you should do nothing to enrich the soil in the planting hole. As general advice this is plausible. However I often find that in general, life is specific. That is to say most of the studies done are on ornamental trees planted in the southeast U.S.

With fruit trees, one of the tenets of success is to rapidly (3–5 years) establish the height and spread of the

continued on next page

tree. With dwarfing rootstocks this is paramount. Dwarf trees become physiologically mature at 5 years (+ or -) and begin to fruit heavily. Fruit is an extreme nutrient sink and will virtually curtail vegetative extension growth. So an enriched planting hole, coupled with aggressive annual growth goals achieves aims. The goal is to double or even triple the canopy of the tree in each of the first 3 years. That is, to extend the leader 2-5' and the primary scaffold branches 2-4' in each year. Sunshine, water and fertilizer are your tools! It's pedal to the metal, judiciously of course.

Positioning and Planting the Tree

Soil Cone

A soil cone can be constructed at the bottom of the hole to facilitate draping and spreading the roots evenly. This is not absolutely necessary and probably not feasible if planting more than a few trees (sure looks cool though, both in real life and in the diagrams). Similarly, the soil at the bottom of the hold can be fractured (12") with a digging fork. This improves both drainage and root penetration. These two techniques are probably requisite on shallow soils (minimum A horizon less than 2 feet) and on heavy clay soils in wet climates.

Planting Board

A planting board or stick (shovel, pool cue, hockey stick, bamboo, etc.) 4-5 feet long placed across the top of the hole indicates true level ground. This is important because the bud union (swollen portion of the trunk at the base) should be planted 2-4" above the true soil level. (Bud union just above soil level is recommended for cold winter climates.) If the bud union is buried –

- There is a propensity for the trunk to rot. This is the weakest, most vulnerable portion of the tree.
- The buried portion of the trunk above the bud union may sprout adventitious (defined as springing from an unexpected and unusual place) roots. The vigor of these roots is such that they will produce a full-size tree 20-30 feet tall.

Soaking Roots

Upon examination, if the tree roots are dry, soak them in water for 2-6 hours, not longer.

Planting

The tree should be held with the trunk perpendicular to the ground at the proper planting depth (referencing the planting stick) by one person. A second person slowly fills the hold with the excavated back fill soil (improved or not). Initially about 1/3 of the soil should be filled in and then the soil gently tamped in by foot. At this point the tree should stand straight unaided. This should be repeated twice more. At this point the depth of planting (bud union) should be rechecked and appropriately adjusted.

Positioning the Tree

In addition to the planting depth, the bud union should be placed with the stem scar (from trunk of rootstock that was lopped off after the bud or graft took) facing north to protect it from sunscald.

The hook on the trunk (just above the bud union) should be positioned into the prevailing wind. This is probably only critical in very windy districts. Additionally the trunk can be protected by whitewashing it with a water-based indoor or exterior Latex paint that is diluted 50% with water. Again this is only critical in high light level, hot interior climates. After 2-3 years the shade afforded to the trunk by the canopy should obviate the need to repeat this whitewashing annually.

Much of the above minutiae (planting board, soaking roots, positioning the tree, etc.) falls into a category Elliot Coleman (New England farmer, systems thinker, farm tool fashioner) refers to as 1% solutions; or things that don't really matter. My take on this is "A whole lot of doesn't matter(s) do."

Watering In

As always in gardening, planting is immediately followed by watering in. This is an axiom—ironclad. When watering in fruit trees you can channel your "inner kid" and mud it up. It's not like a delicate trickling in around the roots of a young Delphinium or lettuce seedling. A thorough soaking of the entire root zone will "get the tree off" and remove any undue air pockets.

Time of Planting

Ideally, deciduous fruit trees are planted as dormant bareroot stock at the outset of the planting season (December-January in coastal California). Although the window for planting extends into March, even early April, the earlier the better. Fruit tree roots begin to grow (and therefore can take up water and nutrients) about 3-5 weeks before any above-ground activity is visible. Thus, the earlier the tree is planted, the quicker it will begin to grow and the greater the first year's growth.

Prepping the planting hole the previous (dry season) summer nets the advantage of easy, quick planting when bare root trees arrive in January / February, especially if the soil is wet as it often is endlessly in January-March.

Also, the earlier in the season that a tree is planted, the quicker it will take root and the stronger will be the first season's growth. That is to say the difference between January planting versus April planting can be as radical as 2-3' of growth. Keep in mind that fruit tree (temperate zone deciduous) roots can and do start to grow at much lower soil temperatures (low 40's F) than do vegetable / flower crops (low to mid 50's F). In essence a fruit tree's roots will start growing and taking up nutrients as much as 3-5 weeks before any visible above-ground activity (bud swell, flowering, leafing out) occurs.

continued on page 12



Apprentice Grad Wins White House Farmer Contest!

Claire Strader, a 2000 Apprenticeship graduate, won the online White House Farmer campaign, beating out 110 other nominees for the position. In just 10 days, nearly 56,000 voters weighed in on this grassroots effort to encourage the new administration to make writer Michael Pollan's call for a White House Farmer a reality, and to support sustainable local food systems. Read more about the contest at www.whitehousefarmer.com.

Claire manages Troy Community Farm, a 5-acre urban farm in Madison, Wisconsin serving local community members with a CSA program, farmstand, and through retail sales.

In response to their election, Claire and runner-up Mary Ann Little wrote: "It is a great honor for us to be recognized by our communities as potential candidates for the first White House Farmer. We are thrilled by the possibility of converting a portion of the lovely White House lawn into a lively vegetable farm. As vegetable, fruit, and flower growers, we know that a well-managed organic farm can be at least as beautiful as a lawn and certainly more engaging, productive, and inspirational.

The fact that so many farmers were nominated for the White House farmer position and that so many individuals voted in this unique "election" speaks loudly to our combined interest in local, organic agriculture. As is made clear in each farmer's nomination, there are many skilled growers who contribute significantly to local food movement throughout our country. We are all unique. We all have a somewhat different focus be it Community Supported Agriculture, or emergency food relief, or youth empowerment. Still, we share the common cause of feeding our local communities with the freshest, cleanest, most healthy food we can coax from the soil.

Taking personal responsibility to a new level by addressing the core issues of the Obama administration's focus, this farm could be the example for the nation. It would clearly address economic insecurity, fuel conservation, climate change, and healthcare issues in a very tangible way. Collectively, this effort could be the center of the cultural shift needed to highlight the imperative that we need to eat locally and think globally.

Together we are working toward a new future of agriculture in our country. We believe that future is grounded

in small-scale, organic food production that meets the nutritional needs of people within reach of the farm and is not shipped from coast to coast at great cost of fuel, freshness, and nutritional value. With the support of more and more eaters in our communities, that future is coming nearer.

A White House farm and a White House farmer will be powerful symbols for this future of agriculture, not to mention a delicious resource for the DC community. No matter who becomes the first White House farmer we stand in support of the White House farm project and would be honored to bring our spades and worm castings and hula hoes to join in the effort!"

Herb Machleder Puts His Training to Work in Los Angeles School Gardens

Herb Machleder, a 2007 Apprenticeship graduate, is now working in Los Angeles to help develop school gardens. In describing his interest in becoming an Apprentice, Herb wrote, "Formerly I was a University Professor, and then I discovered the soil. In early 2006, after completing the training program, I became certified as a Master Gardener of the University of California Cooperative Extension. Since then I've worked with children and teachers to establish school gardens in Los Angeles County. My hope is to continue this direction and help spread the urban garden program with a foundation based on the CASFS approach."

Herb is now doing just that. Earlier this winter, he wrote to let us know how things are going –

"We're slowly regreening the vast sprawling urban monster to the South. Our School Garden at Carthay was featured in the Winter 2008 edition of *Green Technology* magazine. The issue is titled "Green Schools Edition" and the article is "Green From the Ground Up: School Gardens" (also on the web, www.green-technology.org/green_technology_magazine/school_gardens.htm).

Los Angeles County was once the number one fruit growing county in the U.S. Although it's unlikely that it will ever regain that title (from the 1930s), we may well become the number one URBAN fruit growing county in the country. In the past couple of years CommonVision has put in 23 School Orchards, and TreePeople is currently distributing 80,000 fruit trees to schools and community gardens.

Since most of the "professional" gardeners in the County just "Mow-Blow-and Go," we've started an "Urban Orchard Team." We set up Tree Care Workshops in the schools and train the "Orchard Angels," those who will be the local, school garden stewards. This program is for Los Angeles County, primarily in the inner city schools, and we have three workshops scheduled for January.

Whenever we weight or tether an apple branch, we acknowledge Orins's superb guidance!"

Join the Campaign to Help the Apprenticeship!

Grow a Farmer Campaign



Tana Butler

Supporting the training
of new organic growers
at the Farm & Garden Apprenticeship
UC Santa Cruz Center for Agroecology
& Sustainable Food Systems

*Join the Friends of the UCSC Farm & Garden
in helping to build a successful nationwide
fundraiser for the Apprenticeship
and the Apprentice Housing Project*

The Goal

The Friends of the UCSC Farm & Garden are helping to raise the needed \$250,000 for the apprentice housing project by June 2009. The Grow a Farmer Campaign will contribute to this effort by linking us with farm-loving restaurants, chefs, and businesses that care about sustainability, while creating a forum for ongoing support of the Apprenticeship Program.

The Plan...

“Grow a Farmer” in the merry, merry month of May

- **100 Restaurants nationwide put on a Grow a Farmer Benefit in May**—with the option of donating either 10% of sales for one night in May, \$10 a day in May for a donation of \$300, or both.
- **100 Businesses sponsor the Grow a Farmer Campaign**—from natural foods stores to wineries—through specific sponsor pledges and promotions like a 5% day, \$10 a day in May for a donation of \$300, or the donation of silent auction items.

What the Friends are doing to launch this campaign:

- Recruiting high profile chefs and businesses to headline the effort
- Making a growing list of restaurants and businesses to approach
- Developing a tool kit for people like you to help with the campaign. We will send you a Starter Packet with an introduction letter, Grow a Farmer Campaign flyer, Apprentice Housing flyer, pledge form, and other materials.
- Brainstorming best avenues for advertising and networking
- Building a Grow a Farmer Campaign website at www.growafarmer.org.

How to get involved with the Grow a Farmer Campaign



Tana Butler

Become a Cultivator: Join the “Grow a Farmer” Campaign!

- Talk to chefs, restaurateurs, farmers, and business owners you know about doing a benefit or a sponsorship in May.
- Act as liaison between the Friend’s Board and the restaurant(s) and/or business(es) you have identified.
- Rally your network to advertise the event.

Contact us!

Please email the campaign co-leaders Erin Justus and Leon Vehaba at farmandgarden@gmail.com or contact Ann Lindsey at alindsey@ucsc.edu and (831) 566-3779. We are working on a website at www.growafarmer.org and email at growafarmer@ucsc.edu, but for now please use the above contact information and look for updates at <http://casfs.ucsc.edu>. We’ll post updates on our website so you can see what others are doing and how the campaign is progressing.



Thanks for your energies, ideas, and support!

**Board of Directors,
Friends of the UCSC Farm & Garden**

Book Reviews (from page 4)

monocultures that demanded centralization and uniform protocols for dealing with pest problems instead of localized and individualized solutions to particular infestations, making overkill, ecological devastation, and pesticide resistance inevitable.

McWilliams first describes the pest control techniques developed ad hoc by colonial farmers, including their lively exchanges in the pages of the *Yankee Farmer* and other journals of the time. He then details the evolution of the science of entomology in lock step with the development of industries manufacturing chemical pesticides. As he does so, he introduces us to a cast of colorful characters who helped to shape the direction pest control would take in commercial agriculture in the U.S.

Hardly a dry or technical tome, this book could serve as a sequel to Rachel Carson's *Silent Spring*. It'll make you think; it'll make you shake your head; it might even make you laugh. Check it out—I guarantee you'll never look at those bugs and that can of bug spray the same way again!

Planting Fruit Trees (from p. 8)

Fruit tree (vegetative) growth usually shuts down from sometime in mid-late June into July. This is largely because the photosynthetic capability of the leaf is compromised and degraded by the physical environment—wind, UV sunlight rays, water, insect damage, etc., thus, the sooner the tree is planted and leafs out, the more growth will occur before physical degradation shuts down the tree for the year.

While trees can be obtained in containers later in the season, there are problems associated with container-grown specimens –

- Price is often 3–5 times greater than bareroot.
- Container-grown trees offer an extremely limited selection of varieties and rootstocks.
- Container-grown trees do not respond to the root restriction of pots.
- It is extremely dicey to successfully transplant during the active growing season.

Look for more fruit tree information in upcoming issue of the News & Notes.

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