For the Home Orchardist

Reliable Fruit Tree Varieties for Santa Cruz County

– Orin Martin

Planting a fruit tree is, or at least should be, a considered act involving a well thought-out plan. In a sense, you “design” a tree, or by extension, an orchard—and as tempting as it may be to grab a shovel and start digging, the last thing you do is plant the tree.

There are many elements to the plan for successful deciduous fruit tree growing. They include, but are not limited to—

- Site selection
- Soil—assessment and improvement
- Scale and diversity of the planting
- What genera and species (apple, pear, plum, peach, etc.) and what varieties grow well in an area
- Pollination
- Irrigation
- A fertility plan and associated fertilizers
- Sanitation, particularly on the orchard floor
- Weed management
- Pruning/training systems
- Thinning
- Pest and disease control
- Sourcing quality trees
- The planting hole and process
- Harvest and post-harvest

All of the above factors comprise the jigsaw puzzle or the Rubik’s Cube of fruit growing. In essence, you must align all the colored cubes to induce smiles on the faces of both growers and consumers.

This article focuses on the selection of genera, species, and varieties that do well in Santa Cruz County, and discusses chill hour requirements as one major criterion for successful fruit tree growing.

The Reliable—and Not So Reliable

What Grows Well Here

By “what grows well,” I mean what produces a reliable annual crop and is relatively disease and pest free. In Santa Cruz County, that includes—

- Apples
- Pears—both European and Asian
- Quinces
- Plums
- Prune plums
- Pluots
- Persimmons (arguably the easiest of all fruits to grow and maintain)
- Walnuts

continued on page 2
What Grows Passably Well Here

- Figs (some varieties—see Reliable Varieties, page 6)
- Peaches and nectarines (the disease peach leaf curl is the culprit—see Reliable Varieties)
- Apricots/Apriums—1 in 5 years will produce an excellent crop; 1–2 years in 5 a moderate crop; 2–3 years in 5, no crop
- Cherries—only ‘Stella’, ‘Craig’s Crimson’, and ‘Lapins’ are relatively reliable producers

What Grows Poorly Here (i.e., rarely produces a crop)

- Almonds and most nut species
- Most cherries
- Most pomegranates—‘Wonderful’ and ‘Sweet’ are exceptions
- Green gage plums

Chill Hours

It is important to match the number of chill hours your area receives with the chill hour requirements of the fruit varieties you intend to grow. If not, the trees will either break dormancy too early (in the case of a low chill apple) or too late for adequate pollination, and be more subject to disease problems.

The term “chill hours” refers to the cumulative number of hours with temperatures between 32º–45ºF. Its importance reflects the origin of most deciduous fruit trees, which evolved in the northern temperate zones of Europe, Asia, and North America. The genetic material of most of today’s fruit varieties comes from this original cold-hardy stock.

Fruit trees developed the evolutionary strategy of shedding their fruit, dropping their leaves, hardening and encasing their buds in leaf-like wrappings called bud scales, and thus going dormant to protect themselves from cold injury.

During dormancy a tree will not resume growth until it has achieved its requisite chill hours. This adaptive strategy imparts the ability to resist ecto (outside) environmental cues to grow on warm winter days or during “false thaws” of winter, and to bide their time (anthropomorphic as that notion is) until favorable growth conditions occur in the spring.

All regions and all fruit tree varieties have been catalogued as per chill hours, and different areas have different predictable chill hours —

- Coastal California: 500–800 hours
- Southern California, Florida, Coastal Gulf States: 0–200 hours
- Upper Midwest, New York, New England: >2,000 hours
- Mid Atlantic states: 100–1,500 hours
- Southeast states: 600–1,000 hours
- Upper Northwest (inland): >2,000 hours
- Coastal Northwest: 1,000–1,500 hours

Similarly, different fruit species have different chill hour requirements —

- Apples and Pears: 100–2,200 hours
- Apricots, Peaches, Nectarines: 300–1,500 hours
- Japanese or Asian Plums: 300–1,500 hours
- European Prune Plums: 500–1,700 hours
- Persimmons: 300–600 hours
- Apiums and pluots are similar to their dominant parent

Note that almost any chill hour chart will have discrepancies. It is worth experimenting, but not too much (variance in chill hour requirements) or too many (due to cost of trees).

While the weather in Santa Cruz County is variable from the coast to the summit, and as for consistency year to year it is “nothing if not erratic,” it could more clinically be categorized as having moderate to extreme “interannual variability.”

We average 500–800 hours of chill per year. As of January 5, 2012 we had already logged in 576 hours. At the same point last year (January 2011) we had a mere 350 hours. With the La Niña pattern in place, we could potentially amass 900–1,000 chill hours this year. While we can sometimes crop varieties with as low a chill as 300–350 hours and conversely with as high as 900–1,000 hours, trees requiring 500–800 chill hours are the tried and true ones for our region, with 700 chill hours being an even more reliable upper end.

These days, with deciduous fruit tree growing spread across the globe, there is considerable importance in matching a fruit tree variety’s required chill hours with both conducive, predictable weather and the chill hours of your area. Not all trees grow everywhere.
late Winter/early Spring Calendar

Fruit Trees 101: Basic Fruit Tree Care
Saturday, February 4, 10 am – 1 pm
Sierra Azul Nursery, 2660 E. Lake (Hwy 152), Watsonville
Join Matthew Sutton and Pete Drevno of Orchard Keepers to learn the basics of fruit tree selection, planting and care. Wear warm clothes and bring a snack. Heavy rain cancels. $30 general public, $20 for Friends’ members, $5 for UCSC students with student ID. Note: this workshop date is tentative; please call 831.459-3240 or see www.sierra-razul.com the week of January 30 to confirm.

Garden Planning Workshop
Sunday, February 5, 10 am – 1 pm
Louise Cain Gatehouse, UCSC Farm
This workshop led by gardening instructor Trish Hildinger is tailored to gardeners with small plots or raised beds. Learn how to plan your garden for maximum production, including succession planting and crop rotation. Bring a sketch of your garden to plan what, when, and where to plant for spring, summer, and into fall. Wear warm clothes and bring a snack. $30 general public, $20 for Friends’ members, $5 for UCSC students. Note: workshop takes place rain or shine.

In-Depth Winter Pruning – Stone Fruits
Saturday, February 18, 10 am – 1 pm
Louise Cain Gatehouse, UCSC Farm
Learn how to prune your plum, apricot, cherry, and other stone fruit trees from Orin Martin and Matthew Sutton. Wear warm clothes and bring a snack; heavy rain cancels. $30 general public, $20 for Friends’ members, $5 for UCSC students. Note: rainout date is Saturday, February 25, 10 am – 1 pm.

Growing Blueberries in the Home Garden
Sunday, February 19, 10 am – 1 pm
Louise Cain Gatehouse, UCSC Farm
Liz Milazzo and Christof Bernau of the UCSC Farm will discuss soil preparation, planting, pruning, and other care tips for blueberries. Learn about varieties that perform well in this region. Wear warm clothes and bring a snack. $30 general public, $20 for Friends’ members, $5 for UCSC students. Note: workshop takes place rain or shine.

Fruit Tree Q&A Session
Saturday, February 25, 4 pm – 6 pm
The Garden Company, 2218 Mission St., Santa Cruz
Join Orin Martin and Matthew Sutton for a fruit tree Q&A session at The Garden Company nursery. Bring your questions about fruit tree selection and care to this free session. Note: workshop takes place rain or shine.

Fruit Tree Grafting Workshop
Saturday, March 10, 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! $20 general public, $15 for Friends’ members, $5 for UCSC students; free for members of the California Rare Fruit Growers. Note: workshop takes place rain or shine.

Starting Your Garden from Seed
Saturday, March 24, 10 am – 1 pm
Louise Cain Gatehouse, UCSC Farm
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, $5 for UCSC students. Note: workshop takes place rain or shine.

Raising Chickens (& Ducks!) in Town
Saturday, March 31, 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 Glowaski, co-founder of “Urban Eggs,” this workshop will cover the basics of tending small flocks in town, including coop design, breeds, diet, and disease and predator control. Wear warm clothes and bring a snack. $30 general public, $20 for Friends’ members, $5 for UCSC students. Note: workshop takes place rain or shine.

Also coming up at the UCSC Farm ...
• April 1: Top 10 Herbs to Grow in an Herb Garden
• April 14: Bees & Bee Keeping

If you’d like more information about these and other upcoming events, need directions, or have questions about access, please call 831.459-3240, email casfs@ucsc.edu, or see our web site, casfs.ucsc.edu. For a complete list of 2012 events, see Upcoming Events at 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. UCSC student participation supported by UCSC’s Measure 43 funding.

Co-sponsored by the Center for Agroecology & Sustainable Food Systems at UC Santa Cruz, and the Friends of the UCSC Farm & Garden.
**CSA Memberships for 2012 Are Now Available**

Memberships in the UCSC Farm’s 2012 Community Supported Agriculture (CSA) project are now available. Our CSA members get an array of seasonal, fresh-picked organic produce while supporting the training of new organic farmers. A share of produce contains a diverse supply of freshly harvested organic fruits and vegetables (roughly 9-13 items). A share is designed to feed a household of two or three per week, or a larger family that doesn’t cook every day but still wants fresh, organic and local produce.

Our planned start date is June 5th, with the full CSA season (22 weeks) extending through October 30th, weather permitting. This year we’re also offering a half-season option, with the “late-season share” starting on August 21 and running through October 30.

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

Cost of a share for the full 2012 season is $560; a late (half) season share is $280. Payment plans and low-income shares are available. The CSA also accepts SNAP benefits.

For more information or to receive a CSA brochure, call 831.459-3240 or email farmcsa@ucsc.edu. You can also find out more information and download a brochure and pledge form at casfs.ucsc.edu/community-outreach/produce-sales/community-supported-agriculture

---

**New “Garden Cruz” Classes for 2012**

This spring we’ll debut the a new version of our organic gardening intensive course, “Garden Cruz,” this time in a long-weekend format. This 3-day course will provide a solid foundation to further your lifelong study, enjoyment, and practice of organic gardening. The course will be offered Friday through Sunday, May 18–20, from 9 am to 4 pm. A second session will be offered July 20–22.

The course will cover the basic suite of skills needed to create and maintain a successful organic garden, including soil analysis and bed preparation, composting, planting, irrigation, crop care, and harvest. Each day will include both lectures and hands-on practice, giving participants a chance to get their hands dirty while they learn.

Cost of the 3-day class is $300, with a $25 discount for Friends of the Farm & Garden members. Call (831) 459-3240, email casfs@ucsc.edu or see Upcoming Events at casfs.ucsc.edu for details.

---

**Grants to the Apprenticeship**

Three recent grants to the Center for Agroecology & Sustainable Food Systems (CASFS) for the Apprenticeship training in organic farming and gardening exemplify the different kinds of support needed at this time to cover the core program while allowing us to take on new projects and provide scholarships for apprentices with financial need.

A grant of $25,000 from Gaia Fund will allow CASFS to plan and initiate the revision of the two CASFS Apprenticeship training manuals, *Teaching Organic Farming & Gardening: Resources for Instructors*, and *Teaching Direct Marketing and Small Farm Viability: Resources for Instructors*. These manuals, published originally in 2003 and 2005, will be updated and expanded over the next two years. To view the current manuals online, which can be downloaded for free as pdf files for each unit, please see http://casfs.ucsc.edu/education/instructional-resources. We are grateful for Gaia Fund’s generous grant to seed this project.

The Eucalyptus Foundation just announced a $128,000 grant to CASFS for the Apprenticeship Program, most welcome news in a year overshadowed by the permanent state budget cut of $170,000 that hit CASFS this fiscal year. This generous grant will cover core salaries of the Apprenticeship instructors who are the Garden Managers and Farm Field Manager. The work of the Apprenticeship supported by this grant will include training 39 new apprentices in the 2012 program, training second-year apprentices and the further development of their advanced training over the winter months, and staff time working on special projects like the training manuals and the Apprenticeship alumni website. By providing core support for the Apprenticeship, this vital funding also will help the Apprenticeship staff and apprentices create and maintain the vibrant Farm & Garden sites used for organic production, demonstration, education and research.

We are grateful to have been chosen by the AgaDino Foundation for a grant of $5,000 to support an apprentice who otherwise would not be able to attend the program. The AgaDino Foundation board members do research on organizations that inspire them with the goal each year of honoring and celebrating organizations that do good work in the world. The scholarship will support an apprentice who will begin the six-month training program this April.

We are so fortunate to have these and many other supporters who believe in the work of the Apprenticeship. Dozens of former apprentices made year-end donations ranging from $25 to $1,000 this year, and other vital support came from Friends of the UCSC Farm & Garden and other donors contributing to the Friends, CASFS, and the Apprenticeship. Many thanks to everyone.
Responding to Fall & Winter Drought in the Garden

Ironically, as I sat down with garden manager Christof Bernau to talk about responding to the prolonged fall and early winter drought, the first significant rain for over two months was falling outside his office at the UCSC Farm. And although the rain’s arrival may finally signal the opening of the “storm door” that we’ve been waiting for, I was still curious about how gardeners should respond to the type of prolonged dry spell we experienced this season, when the Monterey Bay region received just half an inch of rain between mid November and mid January.

“First and foremost,” says Bernau, “keep in mind that plants use far less water going into the winter months.” As air and soil temperatures fall and days shorten, plants’ evapotranspiration rate—the rate at which they take in and transfer water to roots, leaves, stems, and back to the atmosphere—is greatly reduced. “Reduced growth rates and reduced biological activity brought on by cooler temperatures mean that plants are taking up far less moisture from the soil than they are in the late spring, summer and early fall,” says Bernau. “All of that gives us the opportunity to be more conservative in our water use, especially with well-established plants whether or not they’re considered ‘drought tolerant’.”

Nonetheless, notes Bernau, you do have to be careful about being too conservative—especially with more recently established plants and those with shallow roots, as soils this fall and winter dried down to depths of 6–8 inches.

“Newly planted perennials, salad greens, and plants with shallower root systems need to be buffered against lack of moisture in the surface soil,” says Bernau. This is especially true if you’ve done any type of cultivation or other soil disturbance that introduces air into the soil, which makes it more vulnerable to drying. Plants prone to drying out may need to be watered every ten to twenty days during a prolonged dry period.

Most lawn grasses have roots that only reach 6–8 inches deep, but because their growth slows in the fall they can go for a relatively long time without irrigation. Bernau recommends that gardeners use a soil auger or other coring device to check for moisture in the root zone and respond with supplemental water if the root zone begins to dry out.

Newly planted strawberries with their shallow root systems may also need supplemental water when the rains come late. This is especially true if you use any type of high nitrogen granulated fertilizer (including organic fertilizers), which introduce salts into the soil. “When the rains aren’t moving the salts out of the root zone, they can build up to the point that they damage the plants,” says Bernau.

Other plants that may need extra irrigation during a fall or winter drought include citrus, which have relatively shallow roots and are carrying, sizing and maturing fruit this time of year. “In a ‘normal’ late fall and winter there’d be no need to irrigate citrus, but in a long dry spell it pays to water to ensure that the fruit has an adequate juice content,” says Bernau.

Deciduous fruit trees and cane fruits need less water in a dry winter because little is happening in the way of growth. However, by early February in the Monterey Bay region these plants start to develop new roots and extend existing roots. “Available soil moisture is critical to that process,” says Bernau. If the rains do not return with relative consistency, he recommends that growers of cane fruits and deciduous pome and stone fruits should sample soil moisture in the root zone every 2–3 weeks and deliver water as necessary to a depth of 15–24” to meet early season growth needs.

He also notes that cold temperatures can combine with drought conditions to exacerbate plant damage—another reason to provide supplemental water to some plants. “Water in the cells protects plants against frost,” Bernau explains. “And even though every plant has its own inherent frost tolerance threshold, those stressed by drought become that much more vulnerable to frost damage.”

For those growing cover crops, the timing of this January storm couldn’t be better, as we’ve just crossed the threshold where daylength starts to exceed 10 hours. “Basically, 10 hours of day length is a turning point where things start to grow more quickly,” explains Bernau. “We may have lost a little growth due to the fall drought, but it’s really from mid January on that cover crops start to take off.”

Thankfully, the current rains have given us a reprieve from turning on the sprinklers. If we’re lucky the storm door will stay open for a while, but if not, keep in mind that some plants may need a little extra care this winter.

-New Martha Brown

Newly planted strawberries may need extra water during a dry spell.
Reliable Fruit Varieties — from page 2

What follows is a chart of reliable fruit, their varieties, and their chill hour requirements for Santa Cruz County and environs. This chart is based on two factors: my personal growing experience in the region over 35 years at elevations from sea level to 800 feet, and my personal preferences regarding taste. Life is too short to grow less-than-superlative varieties of fruit. Good luck, plan well, and did I mention the last thing you do is plant the tree!

Reliable Fruit Tree Varieties for Santa Cruz County & Their Chill Hour Requirements

**Apples**
- Cox’s Orange Pippin Parentage
  - Fiesta, Freyburg, Holstein, Queen Cox, Rubinette: 600–800
  - Corail (a.k.a. Sonata, Pinova): 800
  - Cox’s Orange Pippin: 800

- Golden Delicious Parentage
  - Mollie’s Delicious: 400–500
  - Gala: 500–600
  - Mutsu: 600
  - Golden Delicious: 700
  - Jonagold (and related strains): 700–800
  - Chehalis, Elstar: 800–1,000

- McIntosh Parentage
  - Beverly Hills: 300
  - Shay: 700–800
  - Empire Mac, Macoun, McIntosh, Rodger’s McIntosh, Spartan: 800

- Russeted Apples (all of these crop reliably in Santa Cruz County)
  - Gold Rush: 600
  - St. Edmund’s Pippin: 600–700
  - Hoople’s Antique Gold: 600–800
  - Ashmead’s Kernal, Razor Russet Spitzenburg: 800
  - American Golden Russet, Belle de Boskoop, Hudson’s Golden Gem: 800–1,000

**Other Apple Varieties**
- Arkansas Charm: 400
- Pink Lady: 400–500
- Cameo, Fuji, Pink Pearl: 600
- Braeburn, Gravenstein, Yellow Newtown Pippin: 700
- Hauer Pippin, Sierra Beauty: 700–800
- Honeycrisp, Idared: 800
- Bramley’s: 800–1,000

**Pears**
- Summer or Butter Pears
  - Seckel: 500
  - Bartlett: 500–600
  - Warren: 600

- Winter Pears
  - Bosc: 500–600
  - Comice: 600
  - D’Anjou, Flemish Beauty, Orcas, Rescue: 800

**Quinces**
- Pineapple, Orange, Smyrna: 300–500

**Pomegranates**
- Sweet: 100
- Wonderful: 150

**Persimmons**
- Fuyu, Haychia: 100–200 (despite their low chill requirements, they bloom late and set annually)

**Peaches**
- Peach Leaf Curl Resistant Varieties
  - Avalon, Mary Jane: 600
  - Frost, Indian Free: 700
  - Q 1-8: 700–800

- Other Peach Varieties
  - Babcock, Saturn (Peento, Donut): 200–300
  - Late Elberta: 600–700
  - Arctic Supreme: 700
  - Baby Crawford, Indian Blood, Red Haven, White Lady: 800

**Nectarines**
- Double Delight: 300
- Arctic Jay, Fantasia: 500
- Arctic Glo, Arctic Queen, Arctic Rose: 600–700
- Arctic Blaze (taste test winner): 700–800

**Plums**
- Beauty: 250
- Satsuma/Mariposa, Shiro (yellow): 300
- Catalina: 300–400
- Golden Nectar, Santa Rosa/Late Santa Rosa: 400
- Emerald Beauty: 600–700

**Prune Plums**
- Sugar Prune: 500
- Early Italian, French Improved, Italian Prune, Stanley: 800

**Pluots**
- Dapple Dandy, Flavor Grenade: 400–500
- Flavor Queen, Flavor Supreme: 500–600

**Apriums**
- Cot-N-Candy, Flavor Delight: 200–300

**Apricots**
- Blenheim (Royal): 400
- Moorpark: 600

**Figs**
- Black Mission, Blackjack (dwarf), Brown Turkey, Osborne Prolific, White Genoa: 100 (despite their low chill, they set reliably)

**Cherries**
- Stella (dwarf): 400
- Lapins: 500
- Craig’s Crimson (dwarf): 800

**Walnuts**
- Pedro (a somewhat “natural dwarf”): 400
- Chandler: 700
Lily Foster, a 2008 Apprenticeship graduate, dropped by the UCSC Farm this month to visit and report on her work with Sembradores Urbanos (Urban Planters’ Collective), an organization she directs in Mexico. In a letter to the CASFS Farm & Garden staff, Lily writes:

“In the time since I graduated, Sembradores Urbanos has gone on to start up three restaurant gardens, instigating a locavore conversation in the Mexico City food scene, develop and realize an inmate program in three juvenile detention programs with over 300 participants learning to grow food and making weekly donations of fresh vegetables to their families during visits, 4 school gardens totaling 500 student participants and over 50 teachers trained to grow food with their students in the city. In addition we acquired funding to expand our demonstration center to include rainwater harvesting, vertical farming systems and an incredible mural by local artist ‘Venado’. Two community gardens were started in local housing projects with over 15 participating households. Our market garden at the foot of the tallest skyscraper in the city, Torre Reforma, is in its second year and has facilitated over 50 training programs for community groups and government and industry stakeholders, grown over 6,000 seedlings, harvested 10 kilos of organic heirloom seed and sold 600 kilos of fresh organic produce. Lastly, we have had the pleasure of working with a wide and rich network of producers, agronomists, biologists, architects and the general public to realize a series of installations (bio-intensive, sheet mulching, vertical gardens, container gardening, hydroponic and ‘organoponic’ gardens) in Mexico City, Ciudad Juarez, Merida, Oaxaca, Chiapas, Morelia, Cuahtla, and the state of Mexico.

We are thrilled to be on the forefront of digging a sustainable urban landscape. The time spent at the CASFS Farm & Garden has colored my vision of what is possible and given me the technical confidence to go beyond simply “gardening” to actually engineering food systems. When I’m asked to design a production system for an alkaline, tractor-compacted 6 acre project outside the city I can say, yes we can do that. Yes you can go organic. When a chef asks me if her students can grow salad to sell at recess I can choose varieties that won’t wilt in the hot sun of their rooftop garden and know how to systematize harvest, packaging and sales so she can focus on getting the kids to fall in love with food. You are such a big part of making projects like these possible. Thank you for your inspiration and leadership.”

Lily also left a “hot off the press” how-to manual, Huertos urbanos, manual para sembrar en la ciudad, which she helped create, representing what she says is “the first in a line of Spanish language teaching materials we are developing to address the lack of information coming from the global south regarding how to grow food in city spaces. Other manuals include: Miniguia: un huerto en tu casa, Mini guia lombricomposta.”

You can learn more about Sembradores Urbanos at their website, www.sembradoresurbanos.org.
Winter Recipes from *Fresh from the Farm & Garden: Seasonal Recipes for Busy Cooks, Volume 2*
A Project of the Friends of the Farm & Garden, edited by Sue Tarjan

**Baked Shitake and Potatoes**
- 3 or 4 medium russet or Yukon gold potatoes, sliced
- 1 medium onion, sliced
- 1/2 pound fresh shitake mushrooms, sliced
- 3/4 teaspoon salt
- 1/2 teaspoon freshly ground black pepper
- 1 teaspoon dried or 2 teaspoons fresh thyme
- 1 cup heavy cream
- 2–3 tablespoons chopped fresh parsley

Preheat oven to 350 degrees.
Butter or oil a shallow baking dish. Layer the potatoes, onions, and shitake. Sprinkle with salt, pepper, and thyme. Pour cream over the top.
Cover. Bake for 30 minutes.
Uncover and bake another 30 minutes or until the potatoes can be pierced easily with a fork and the sauce is bubbly.

**Mushroom and Greens Patties**
- 2–4 tablespoons olive oil
- 1 pound mushrooms, chopped
- 1 pound greens (spinach, chard, etc.), chopped fine
- 1 cup minced onion
- 6–8 cups cooked rice, short-grain brown best
- 1 tablespoon tamari or soy sauce
- 1 tablespoon flour

Steam greens until wilted. Heat 2 tablespoons of the oil and sauté onion a few minutes. Add mushrooms and cook, stirring frequently, until they release their juices and start to brown.
Add flour and soy sauce; stir well, scraping up brown bits. Add rice, combine well, and remove from heat. Mash well and cool enough to handle.
With floured hands, form small patties while heating the remaining oil in a clean skillet. Brown on both sides and serve as you would hamburgers.
Serves 4–6

Note 1: mixture keeps for a day in refrigerator.
Note 2: add an egg if you want to give it a bit of richness and help to bind the ingredients.