Edible Landscaping

Presented by Debbie Hillel & Gail Fulbeck
Welcome!

- We are the UCCE MGs of EDC
- Volunteers, trained by the U of C
- Goal of providing research-based information to our community’s home gardeners
- Sign in & evaluation form
- Publications
- Timetable/snacks/restrooms
- Donations
Thank you to our hosts

Susan Corey
McAlpine
Heidi Napier
Suzanne Surburg
Maria White
Tim White
Overview

*Definition:* Edible landscaping is the use of food plants as design features in a landscape. These plants are used both for aesthetic value as well as consumption.

*Important Note:* Edible landscapes encompass a variety of garden types and sizes but do not include food items produced for sale.
History of Edible Landscaping:

- Three most influential landscape styles from Europe have their roots in food-production: *Italian Renaissance* gardens, *French Baroque* gardens, and *English Picturesque* landscapes.
- The *Ferme Ornee*, or ornamental farm, represents a period of popular landscape design that sought to balance food-producing with ornamental planting techniques.
- Precedents for the integration of food-growing with alternative landscape uses exist in examining victory and community gardening in the US.

Image Sources: [www.nationaltrust.org/uk/](http://www.nationaltrust.org/uk/)
Italian Renaissance gardens

Hamilton Gardens NZ
Edible landscaping

7 Suggestions to start with:

- Make a plan. Ask yourself, “What do I like to eat? What space can I use?”
- Do your research.
- Start small, and have a pot ready or a hole dug before you buy a plant,
- Don’t rip up your whole yard and start over.
- Analyze your landscaping needs, and find edible plants to meet them.
- Walk out and look at your plants often to keep abreast of disease or insect problems. “The most important thing you can see in a garden is the gardener’s shadow.”
- Make sure any fertilizers, pesticides and mulches you use are safe for edible plants.
Edible Landscape vs. Traditional Landscape

**The Pros**

- Environment – decreased food miles, reduced reliance on fossil fuel supported calories
- Health - food security, horticulture therapy, healthy food choices

In general, edible landscaping promotes sustainable gardening practices
Edible Landscape vs. Traditional Landscape

*The Cons*

- Increased maintenance requirements, seasonal planting, regular garden planning
- Increased water needs
- Increased plant waste typically requires healthy compost pile
- Pests --maybe
Planting & Maintenance
Site Issues - Sun and Shade

- Most edibles need at least 6 hours of sun per day
  - Affects performance & yield
  - Seasonal variation in sun angle
Sun and Shade:  
*Both a Challenge and an Opportunity*

- Create attractive, productive shady spot
  - Grape or kiwi arbor, fruit tree espalier
Pests and Weeds

- Pest management often more demanding with edibles
- IPM more complex
Pests (and Good Citizenship)

- Invasive pest issues
  - Citrus ACP/HLB
  - SOD (sudden oak death)
  - Light brown apple moth
  - Brown marmorated stink bug (BMSB)
  - Diaprepes root weevil
  - Etc.

- County Agriculture Department

- Invasive plant prevention

- Cal-IPC database
Weeds

- Weed management without herbicides
  - Mulch
  - Hand pull
Do You Have a Pest? Is it a Problem?

- Identification - Vigilance!

- Assess damage, determine action to take - if any
  - Cultural and Mechanical Controls
  - Conservation of Biological Controls
  - Chemical controls as a last resort
Step 1: Prevention!

- Choose well-adapted/low pest species & varieties
- Plant at the right time to avoid stress - Goldilocks
- Avoid over-fertilization and overwatering
- Weed control – use of mulches, limited or no use of herbicides
- Rotate when possible (annuals only of course)
- Learn to recognize, and provide safe haven for beneficials
Beneficials

- Beneficial insect habitat
  - Hedgerow research provides some key plants
    - California buckwheat, coyote brush, elderberry, coffeeberry, toyon and California lilac (Ceonothus)
  - Bloom, when nectar and pollen are available

- Security through diversity
How to Manage Pests

Pests in Gardens and Landscapes—Vegetables and Melons

Search vegetables:  

Vegetables and melons

- Artichokes
- Asparagus
- Beans
- Broccoli
- Brussels sprouts
- Cabbage
- Cantaloupe
- Carrots
- Cauliflower
- Corn
- Cucumbers
- Eggplant
- Lettuce
- Onions and garlic
- Peas
- Peppers
- Potatoes
- Pumpkins
- Spinach
- Squash
- Tomatoes
- Watermelon
Soil Management in the Edible Landscape

- Fertilizer management for edibles vs. ornamentals
  - Edibles often require more fertilizer, especially N
  - Consider using slow-release N

- Container growing
  - Avoids soil management issues
  - Requires good drainage
    - No rocks in the bottom!
Water-saving Edible Garden Tips:

- Plant an appropriate size garden for your household
- Plant shorter season crops and drought resistant varieties
- Know critical watering periods, for example transplanting and fruit development
- Apply a 3” to 4” layer of mulch
- Compost adds nutrients to soil and can produce higher yields
- Remove weeds, which compete for water resources
- Install a water efficient drip irrigation system
Gray Water?

https://ucanr.edu/mg/users/Documents/5758Dealing%5Fwith%5FDrought50709.pdf

http://www.eid.org/regulatory/domestic-water-reuse-graywater

http://greywateraction.org/

Create an Oasis with Greywater, by Art Ludwig
Edible Landscaping

Plant & Site Selection
Incorporating Edibles into your Landscape...

Make a list of edibles you like and that grow well in your climate

- Identify the cultural needs of each
- Realize that some plants may not be compatible with certain areas or existing plants
- Be aware of overall form
- Identify any pests/diseases that are common
Choosing Varieties That Best Suit your Needs

- Some plants have varieties / cultivars that are better suited in your landscape
  - Drought tolerance
  - Disease resistance
  - Pest resistance
  - Striking or profound colors

Five color Silverbeet Swiss Chard, from Baker Creek
Site Selection

- Most edible crops perform best when well irrigated and receive at least 6-8 hours of sunlight

- Edibles can be used as
  - Ground covers
  - Annual low border bedding plants
  - Visual screens
  - Trellis vines
  - Hanging baskets/containers
Edible Ground Covers

Alpine strawberry
Blueberry (lowbush)
Chamomile
Cranberry
Cucumber
Lingonberry
Mint (creeping)
Natal plum (dwarf)
Oca
Peanut (temporary cover)

Rosemary (trailing)
Sweet potato (temporary)
Sweet woodruff
Thyme
Wintergreen
# Edible Herbaceous Borders

<table>
<thead>
<tr>
<th>Alpine strawberry</th>
<th>Cucumber (bush or trellis)</th>
<th>Parsley</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angelica</td>
<td>Edible flowers</td>
<td>Pea</td>
</tr>
<tr>
<td>Anise hyssop</td>
<td>Eggplant</td>
<td>Pea</td>
</tr>
<tr>
<td>Artichoke</td>
<td>Endive</td>
<td>Peanut</td>
</tr>
<tr>
<td>Arugula (perennial)</td>
<td>Kale</td>
<td>Pepper</td>
</tr>
<tr>
<td>Asparagus</td>
<td>Lavender</td>
<td>Poppy (breadseed)</td>
</tr>
<tr>
<td>Basil</td>
<td>Lettuce</td>
<td>Rhubarb</td>
</tr>
<tr>
<td>Beet</td>
<td>Licorice</td>
<td>Rosemary</td>
</tr>
<tr>
<td>Borage</td>
<td>Lovage</td>
<td>Safflower</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Marjoram</td>
<td>Sage</td>
</tr>
<tr>
<td>Cabbage</td>
<td>Mitsuba</td>
<td>Scented geranium</td>
</tr>
<tr>
<td>Cantaloupe (bush)</td>
<td>Mizuna</td>
<td>Sea kale</td>
</tr>
<tr>
<td>Celery</td>
<td>Nasturium</td>
<td>Shallot</td>
</tr>
<tr>
<td>Chard</td>
<td>Okra</td>
<td>Squash (summer)</td>
</tr>
<tr>
<td>Chives</td>
<td>Orach</td>
<td>Tarragon</td>
</tr>
<tr>
<td>Collards</td>
<td>Oregano</td>
<td>Tomato (determinate)</td>
</tr>
</tbody>
</table>
Edible Herbaceous Borders
Edible Flowers

- Anise hyssop
- Apple
- Arugula
- Basil
- Bee Balm
- Borage
- Broccoli
- Calendula
- Chamomile
- Chervil
- Chicory
- Chives
- Chrysanthemum
- Citrus
- Daylily
- Dianthus
- Dill
- Elderberry
- Hibiscus
- Hollyhock
- Johnny-jump-up
- Lavender
- Lemon verbena
- Lilac
- Marigold
- Mint
- Nasturtium
- Okra
- Passion flower
- Pineapple guava
- Redbud
- Rose
- Rosemary
- Sage
- Scented geranium
- Squash
- Sunflower
- Sweet woodruff
- Thyme
- Tulip
- Violet
Edible Flowers
Planting Your Edible Landscape

- **Seasonal temperatures are very important**
  - Warm season crops germinate best when soils is between 65 to 80°F
  - Cool season crops germinate best when soil is between 60 to 60°F

- **Plants can be direct seeded, transplants, or self seeding**
  - Use direct seeding for large seeded plants: corn, melons, squash, beans and peas; and for root crops: carrots, radish, beets, turnips, and parsnips
  - Use transplants for crops that you want to get an early start by growing them in the house, a cold frame or greenhouse
Best of both worlds – edible & ornamental

• Inter-planting reduces pests
• New textures, forms, colors
• Grow what you like best
• Fun for everyone
• Great conversation piece
Just For You

Tomatoes –lots!
Strawberries –lots!
Scented Geraniums
Raspberries
Pomegranates
Grape –only 1 –yikes!
Herbs
Hibiscus
Edible Landscaping

Fruit
Low-Maintenance Fruit Species

- Cane berries & blueberries
- Citrus (for now)
- Figs
- Jujubes
- Persimmons
- Plums & pluots
- Pomegranates
Fruit Trees in Edible Landscapes

- Allow enough room to prune, thin, & harvest
- Roots will spread 2-3 times the width of the canopy
- Consider effects of sprays on adjacent plants
- Consider clustering fruit trees and keeping them small
  - Similar irrigation, bird netting, mulching, pollination
Serious Problems with Some Fruit Trees

- Apples & pears – Fire blight, codling moth
- Apricots – Brown rot, bacterial canker
- Cherries – Spotted-wing Drosophila
- Citrus – Asian citrus psyllid, citrus greening, scale insects, frost
- Peach/nectarines – Peach leaf curl
- Grapes – Powdery mildew

Practical solutions to several of these pests have been developed
Site Selection

- 6-8+ hours of full sun
- Shelter from high winds
- Some trees may benefit from warm south wall
- Avoid planting where fruit falls on walks or driveway
- Soil should be at least 2-3 ft. deep
Dwarf Fruit Trees
Dwarf Citrus Trees
Dwarf Fruit Trees
Espaliered Fruit Trees
Espaliered Fruit Trees
Espaliered Fruit Trees
Espaliered Fruit Trees
Espaliered Fruit Trees
Fall Color

- Pomegranate & Blueberry
Fall color
Blueberry ground cover
Fall color
Persimmon
Fall color
Espaliered Pear
Policy
Check Your Local Community rules
Harvest & Storage
Stages of Ripening

**Fully Ripe - Tree Ripe**

- Full maturity and ready to eat at harvest.
- Best for fresh eating, drying
- Firm ripe is better for canning and freezing
- Fruit may or may not continue to ripen after harvest
Pick when fully ripened

- All berries, including blackberries, blueberries, raspberries, strawberries, gooseberries and currants.

- Other fruits that taste best when allowed to ripen on their plant or tree include cherries, all citrus fruits, figs, grapes, pineapples, pomegranates and watermelons.
How Much is Too Much?
Sanitation and Harvest

- Use only clean, sanitized buckets and bins
- Wash hands prior to harvest
- Wear clean cotton gloves to reduce contaminants on fruit
- Do not stack bins/buckets
Twist Up!
Key Storage Requirements

Depends on Product:

- Most ripe fruit (apples, stone fruits, fig and berries)
  - Harvest in a.m.
  - Place in refrigerator at 32-35F ASAP
  - Chill fruit after harvest and keep cold until use
### Storing Fresh Fruits and Vegetables for Better Taste

<table>
<thead>
<tr>
<th>Storage Location</th>
<th>Fruits and Melons</th>
<th>Vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Store in refrigerator</strong></td>
<td>apples—</td>
<td>green onions</td>
</tr>
<tr>
<td></td>
<td>(more than 7 days)</td>
<td>herbs (not basil)</td>
</tr>
<tr>
<td></td>
<td>apricots</td>
<td>leafy vegetables</td>
</tr>
<tr>
<td></td>
<td>Asian pears (nashi)</td>
<td>leeks</td>
</tr>
<tr>
<td></td>
<td>blackberries</td>
<td>lettuce</td>
</tr>
<tr>
<td></td>
<td>blueberries</td>
<td>mushrooms</td>
</tr>
<tr>
<td></td>
<td>cherries</td>
<td>peas</td>
</tr>
<tr>
<td></td>
<td>cut fruits</td>
<td>radishes</td>
</tr>
<tr>
<td></td>
<td>figs</td>
<td>spinach</td>
</tr>
<tr>
<td></td>
<td>grapes</td>
<td>sprouts</td>
</tr>
<tr>
<td></td>
<td>raspberries</td>
<td>summer squashes</td>
</tr>
<tr>
<td></td>
<td>strawberries</td>
<td>sweet corn</td>
</tr>
</tbody>
</table>
| **Ripen on the counter first, then store in the refrigerator** | avocados
kiwi fruit
nectarines
peaches | pears
plums
plumcots |
| **Store only at room temperature** | apples—
(fewer than 7 days)
bananas
grapefruit
lemons
limes
mandarins
mangoes | muskmelons
oranges
papayas
persimmons
pineapple
plantain
pomegranates
watermelons |
|                           | basil (in water)                | pepperst
potatoes
pumpkins
sweet potatoes
tomatoes
winter squashes |
|                           | cucumbers
dry onions
eggplant
garlic
ginger
jicama | "Store garlic, onions, potatoes, and sweet potatoes in a well-ventilated area in the pantry. Protect potatoes from light to avoid greening. Cucumbers, eggplant, and peppers can be kept in the refrigerator for 1 to 3 days if they are used soon after removal from the refrigerator."|
What about Storing Vegetables?

http://ucanr.org/sites/gardenweb/files/29040.pdf

<table>
<thead>
<tr>
<th>Vegetable</th>
<th>North and North Coast</th>
<th>South Coast</th>
<th>Interior Valleys</th>
<th>Desert Valleys</th>
<th>Crop type</th>
<th>Amount to plant (4 persons)</th>
<th>Distance between plants in inches (cm)</th>
<th>Distance between rows (no buds) (m)</th>
<th>Best temp °F (°C)</th>
<th>Time length (weeks)</th>
<th>How to preserve</th>
</tr>
</thead>
<tbody>
<tr>
<td>artichoke</td>
<td>Aug–Dec</td>
<td>May–Jul</td>
<td>Jul</td>
<td>Sep</td>
<td>C</td>
<td>3–4 plants</td>
<td>48 (122)</td>
<td>10 (1.5)</td>
<td>32 (0)</td>
<td>1–2</td>
<td>freeze whole, can, dry, or freeze hearts</td>
</tr>
<tr>
<td>asparagus</td>
<td>Jan–Mar</td>
<td>Jan–Feb</td>
<td>Jan–Feb</td>
<td>Feb–Apr</td>
<td>C</td>
<td>30–40 plants</td>
<td>12 (31)</td>
<td>60 (1.5)</td>
<td>32 (0)</td>
<td>3–4</td>
<td>can, dry, or freeze</td>
</tr>
<tr>
<td>beans, lima</td>
<td>May–Jun</td>
<td>May–Jun</td>
<td>May–Jun</td>
<td>—</td>
<td>W</td>
<td>15–25-ft row</td>
<td>6 (15) bush; (4.5–7.5-m row)</td>
<td>30 (0.8)</td>
<td>40 (4)</td>
<td>1–3</td>
<td>can, dry, or freeze</td>
</tr>
<tr>
<td>beans, snap</td>
<td>Jul; May–Jun</td>
<td>Mar–Aug</td>
<td>Apr–May; Jul–Aug</td>
<td>Jan–Mar; Aug</td>
<td>W</td>
<td>15–25-ft row</td>
<td>3 (7.5) bush; 24 (61) pole</td>
<td>30h (0.8)</td>
<td>45–55 (7–13)</td>
<td>1–2</td>
<td>can, dry, or freeze</td>
</tr>
<tr>
<td>beets</td>
<td>Feb–Aug</td>
<td>Jan–Sep</td>
<td>Feb–Apr; Aug</td>
<td>Sep–Jan</td>
<td>C</td>
<td>10–15-ft row</td>
<td>2 (5)</td>
<td>18h (0.5)</td>
<td>32 (0)</td>
<td>3–10</td>
<td>can, dry, or freeze</td>
</tr>
<tr>
<td>broccoli</td>
<td>Feb–Apr; Aug–Sep</td>
<td>Jun–Jul</td>
<td>Dec–Feb; Jul</td>
<td>Sep</td>
<td>C</td>
<td>6–10-ft row</td>
<td>12–18 (2–3-m row) (30–45)</td>
<td>3 (0.9)</td>
<td>32 (0)</td>
<td>1–2</td>
<td>dry or freeze</td>
</tr>
<tr>
<td>brussels sprouts</td>
<td>Feb–May</td>
<td>Jun–Jul</td>
<td>—</td>
<td>—</td>
<td>C</td>
<td>15–20-ft row</td>
<td>24 (61)</td>
<td>36 (2.9)</td>
<td>32 (0)</td>
<td>3–4</td>
<td>dry or freeze</td>
</tr>
<tr>
<td>cabbage</td>
<td>Jan–Apr; Jul–Sep</td>
<td>Aug–Feb</td>
<td>Jul; Feb</td>
<td>Sep–Nov</td>
<td>C</td>
<td>10–15 plants</td>
<td>24 (61)</td>
<td>36 (0.9)</td>
<td>32 (0)</td>
<td>12–16</td>
<td>dry or freeze</td>
</tr>
<tr>
<td>cabbage, Chinese</td>
<td>Jul–Sep</td>
<td>Aug–Oct</td>
<td>Aug</td>
<td>Aug–Nov</td>
<td>C</td>
<td>10–15-ft row</td>
<td>6 (15)</td>
<td>30h (0.8)</td>
<td>32 (0)</td>
<td>2–3</td>
<td>dry or freeze</td>
</tr>
</tbody>
</table>
Long-Term Storage

- Several methods of home preservation
  - Freezing
  - Drying
  - Fermentation
  - Pickling
  - Canning
  - Jams and Jellies

- UC Home Preservation and Storage Publications
  - www.ucfoodsafety.ucdavis.edu
Food Safety
Key points

- Fruits and vegetables can be a source of foodborne illness
- Common sources of foodborne pathogens (microorganisms that cause illness) in produce include:
  - Water
  - Animals: wild and domestic
  - Soil amendments (especially animal-based)
  - People
- Preventing contamination is key
  - Evaluate and mitigate risks from pre-plant to harvest of the edible landscape.
Equipment and Personal Protective Items

- Check that all are clean and well maintained
- Consider designating tools/gear for certain tasks
  - Chemical use/Compost
  - Harvesting
- Wash and sanitize harvest tools (e.g., clippers, knives) and gloves
  - As you would kitchen utensils
- Keep workspace clean
Additional resources

- http://anrcatalog.ucdavis.edu/
- http://ucanr.org/sites/gardenweb/files/29040.pdf - information about storing vegetables
- http://www.ipm.ucdavis.edu - UC Integrated Pest Management web resources
- http://postharvest.ucdavis.edu/producefacts/ - post harvest details
- http://cagardenweb.ucanr.edu/Drought_/Drought_Gardening_Tips_/ - tips for growing edibles in a drought
- http://cagardenweb.ucanr.edu
- See handout
Books for inspiration:

- **All in One Garden** by Graham Rice
- **Creative Vegetable Gardening** by Joy Larkcom
- **The Complete Book of Edible Landscaping** by Rosalind Creasy
- **The Edible Landscape** by Emily Tepe
Other Publications

- **The Home Orchard; Growing your Own Deciduous Fruit and Nut Trees** by Ingels, C., Geisel, P., Norton, M: University of California Publication 3485 2007


- **Great Garden Companions** by Cunningham, S. Emmaus: Rodale Press, Inc., 1998

- **Pests of the Garden and Small Farm, 2nd Edition** by Mary Louise Flint Publication Number: 3332  Copyright Date: 1998
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Thank you for attending!