

The slide features a light beige background with a repeating pattern of small, stylized green leaves. The title 'Edible Landscaping' is written in a large, dark red, cursive font. To the right of the title, there are several green, stylized tree and shrub icons of various sizes, some with a small cross inside. The entire content is framed by a solid green border.

# Edible Landscaping

Combining Form & Function  
in Managing FoodScaping  
Opportunities & Challenges

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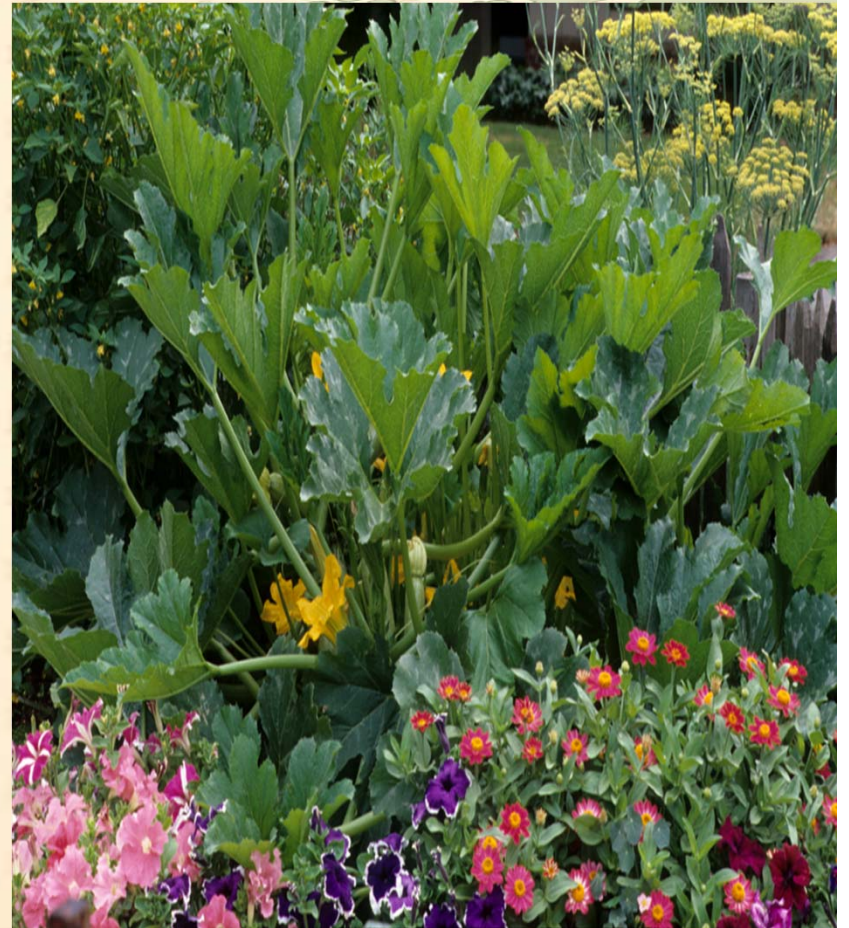
# Edible Landscaping Overview

## ***Definition:***

Use of food plants as design features in a landscape both for aesthetic value as well as consumption.

## *Important Note:*

Edible landscapes are diverse in garden types and scales, but do not include food items produced for sale.



# Edible Landscape vs. Traditional Landscape

## *The Pros*

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



In general, edible landscaping promotes sustainable gardening practices that maximize water efficiency, support wildlife and reduce the use of chemicals in the landscape.

# Edible Landscape vs. Traditional Landscape



Image Source: Carmia Feldman

# Edible Landscape vs. Traditional Landscape

## *The Cons*

- Time – increased maintenance requirements, seasonal planting, regular garden planning
- Inputs – increased water needs
- Practices - increased plant waste typically requires healthy compost pile management
- Phases



# *History of Edible Landscaping:*

- 20<sup>th</sup> Century USA Relief and Victory Gardens Movement
- European Landscape Styles:

*Italian Renaissance gardens (16<sup>th</sup> Century)*

*French Baroque gardens (17<sup>th</sup> Century)*

*English Picturesque landscapes (19<sup>th</sup>-20<sup>th</sup> Centuries)*



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

# *Edible Landscapes as Defined Today:*

- Food Plants: both ornamental and productive.
- The Integrated Functional Balance of Food-Growing with innovative landscape forms & functions.



Image Sources: "Carrot City" by M. Gorgolewski, SWA Group, & C. Napawan



# Planning & Design

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# Site Selection

- Know the history of the land
  - Risk assessment of prior use
- Consider the neighbors
  - Zoning in surrounding areas
  - Present/Future use
- Existing structures/equipment
  - Septic tanks
  - Plumbing
  - Toilets
- Soil Quality

# Land Use Policies

- Private Property Land Use Policies/Restrictions
  - Focus on community gardens rather than residential landscapes
- Home Owner's Associations
  - Restrictive Covenants
  - Covenants, Conditions, Restrictions (CCR)
  - **Maintenance and aesthetics are key!**
- AB 1061, Lieu 2009
  - Effectively promotes the use of low water-using plants

# Designing Edible Cities

Hantz Farms Proposal  
Detroit, Michigan



ILLUSTRATION: BRYAN CHRISTIE

Image Source: <http://money.cnn.com/>

# Design & Planning of Edible Landscapes: Same Principles

- **Site Assessment** includes analyzing physical attributes such as site location & neighboring features; growing region, climate, & microclimate; and resource availability such as water, soil, and solar energy.
- **Client/User(s) Assessment** includes understanding the needs/desires, the existing or intended patterns of use, and the maintenance capabilities of the client/users.
- **Programmatic (or functional use) Assessment** includes recognizing the functions attributed to the landscape other than food-growing.

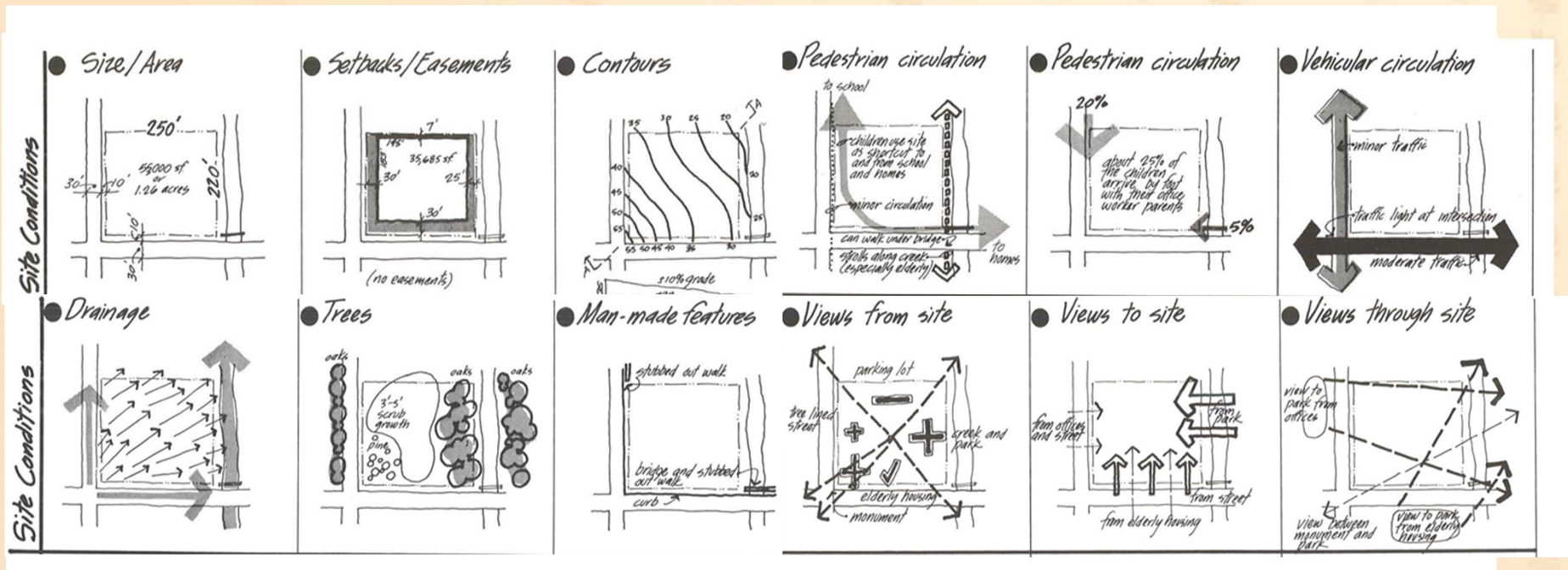


Image Source: "Site Analysis" by E. T. White

# *Edible Landscaping: Designing for Form as well as Function:*

Because a landscape loved is a landscape likely to endure.



*Containers*



*Hedges/Walls*



*Carpets*



*Canopies/Columns*



vs.



*Image sources: "Form & Fabric in Landscape Architecture," by C. Dee; & C. Napawan*



# Planting & Maintenance

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# Plants Selection:

## Goals: Diverse & Complex Plant Systems

- Increases diversity
- Eliminates monoculture
- Creates habitat for beneficial organisms
- Crops selected for yield and aesthetics



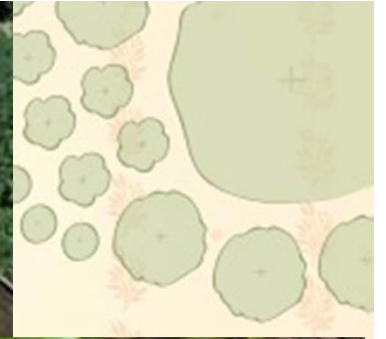
# Sun and Shade Effects



- Affects Crop Performance and Yield
  - Most crops need at least 6 hours of sun per day
  - Sub-surface Soil Temperatures in Early Spring/Late Fall
- Plan for Seasonal Variation in Shade and Sun Angles
- Plan for Seasonal Variation of Crops Produced
- Spring/Fall Colors, Dawn and Dusk Silhouettes

# Inputs Required

- Time and labor
  - Attention, customer training, maintenance
  - composting
- Fertilizer
  - Frequency and Type
  - Organic vs. synthetic
  - Timing/Planning
- Water
  - Amount
  - Variation in application methods



# Pests and Weeds

- Pest Management ~ Demanding with Edibles
- IPM more complex
- Thresholds



# Management Considerations in Edible Landscaping

- Routine Replanting of Annual Crops
  - Dedicate bed space if possible and amend with Organic Material before Planting.
- Inter-planting edible crops into existing landscape areas
  - Cultivation and root disturbance of permanent plants pose problems.
- Consider Perennials

# Soil Management in the Edible Landscape

- Fertilizer management for edibles vs. ornamentals
  - More fertilizer?
- Container growing
  - Avoids soil management issues
  - Requires good drainage
  - Requires even more H<sub>2</sub>O

# Water Use in the Edible Landscape

- CAN Plant Crops in Non-Uniform Rows
  - Hydrozoning & Irrigation Scheduling
    - ~ On Plant Needs
  - Drip irrigation
- Higher Planting Density ~ H<sub>2</sub>O
  - Above vs. Below Ground/Short Term Vs. Long
  - Use soil amendments and mulches effectively to help with soil water retention



# Site Preparation: AMENDMENTS & MULCHES

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# Soil Amendments

## ■ Compost

- Animal sources (manure)
  - Potential source of high levels of pathogens
  - Properly composted or heat treated
  - **Manure from pigs, dogs, and cats must not be used**
    - parasites may remain viable after composing
- Vegetative matter (no manure)

## ■ Green manures

- Plant matter grown and chopped and incorporated into soil

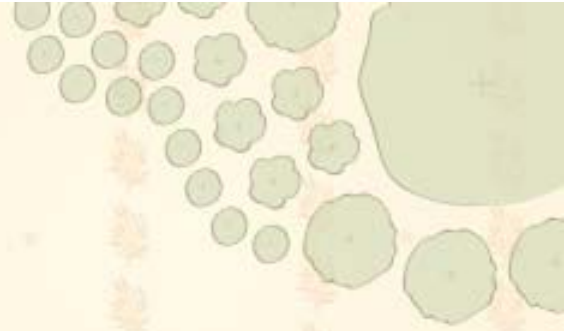


# Compost

## How to Amend Soil with Compost

- Add 30% compost (by volume) to original soil
- Mix compost 6 inches to 1.5 feet deep based on root depth
- Direct Sow or Transplant
- Keep Soils Moist throughout roots establishment

# Chemical vs. Organic Fertilization



# Fertilizing the Edible Landscape

## Chemical vs. Organic Fertilizers

Organic and Chemical Sources  
(no preference)

- Organic Types Feed Soil Microbes
- Microbes convert nutrients into a plant-available form

# *Combining Form and Function*



Image Source: Rosalind Creasy

# Organic Fertilizer Categories

## ■ Animal-based

- Animal killed (blood, bone, & feather meals and fish products)
- Animals not killed (bat guano, manures)

## ■ Plant-based

- Alfalfa, cottonseed, and soybean meals, kelp/seaweed

## ■ Compost

- Usually considered a soil amendment, not fertilizer

## ■ Mined organic fertilizers

- Phosphorus: Soft rock phosphate
- Potassium: Muriate of potash, sulfate of potash, greensand

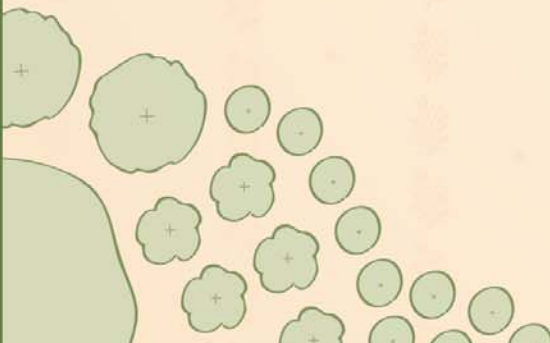
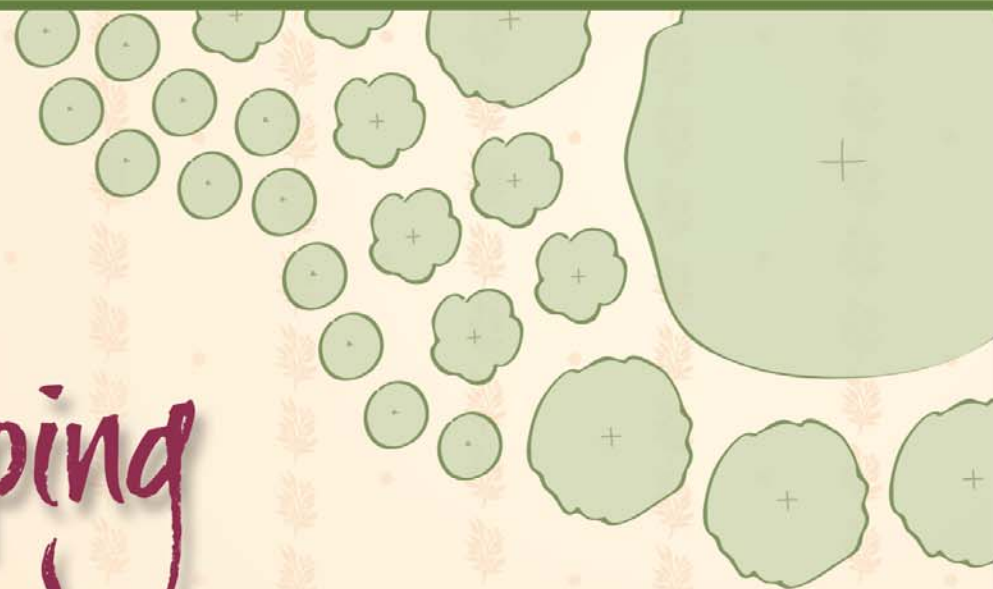
# Mulch

## How to Amend Soil with Mulch

- Apply <2.5” Hay on Soil Surface
- Carefully spread around the base of plants using a shovel, rake or by hand

# Edible Landscaping

*Vegetables*



# Site Selection

- Vegetable crops do best with H<sub>2</sub>O > and 6-8 hours of sunlight
- Vegetables can be used as
  - Ground covers
  - Annual bedding plants
  - Visual screens
  - Trellis vines
  - Hanging baskets/containers



# Planting Vegetables into Your Landscape...

## **Identify Edibles YOU Like and that Grow Well in YOUR Climate**

Identify the cultural needs of each

- Sun vs. shade
- Soil ph
- H2O & Nutrient requirements
- Compatibility
  
- Aesthetic
  - Size, shape, color, flowers, fruit
- Identify Common Pests/Diseases

# Choosing Varieties That Best Suit Your Needs

- Plants varieties/cultivars for your landscape
  - Drought tolerance
  - Salt tolerance
  - Disease resistance
  - Pest resistance
  - Striking or more profound colors



<http://gurneys.com>

# + 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



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<http://organicgardening.com>

# + Edible Herbaceous Borders

Alpine strawberry

Angelica

Anise hyssop

Artichoke

Arugula (perennial)

Asparagus

Basil

Beet

Borage

Broccoli

Cabbage

Cantaloupe (bush)

Celery

Chard

Chives

Collards

Corn

Cucumber (bush or trellis)

Edible flowers

Eggplant

Endive

Kale

Lavender

Lettuce

Licorice

Lovage

Marjoram

Mitsuba

Mizuna

Nasturium

Okra

Orach

Oregano

Parsley

Pea

Peanut

Pepper

Poppy (breadseed)

Rhubarb

Rosemary

Safflower

Sage

Scented geranium

Sea kale

Shallot

Squash (summer)

Tarragon

Tomato (determinate)

# Edible Herbaceous Borders



© Rosalind Creasy

# + 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





# Planting Your Edible Landscape

- Seasonal temperatures are very important
  - Warm season crops germination 65 to 80°F
  - Cool season crops germination > 60°F
- Direct seeded, transplants, or self seeding
- Direct Seeding vs. Transplanting
- Hardening Off

# Edible Landscaping



# 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



# Crop Specific Information

- Selected planting and training methods

# Fruit Tree Considerations in Edible Landscapes

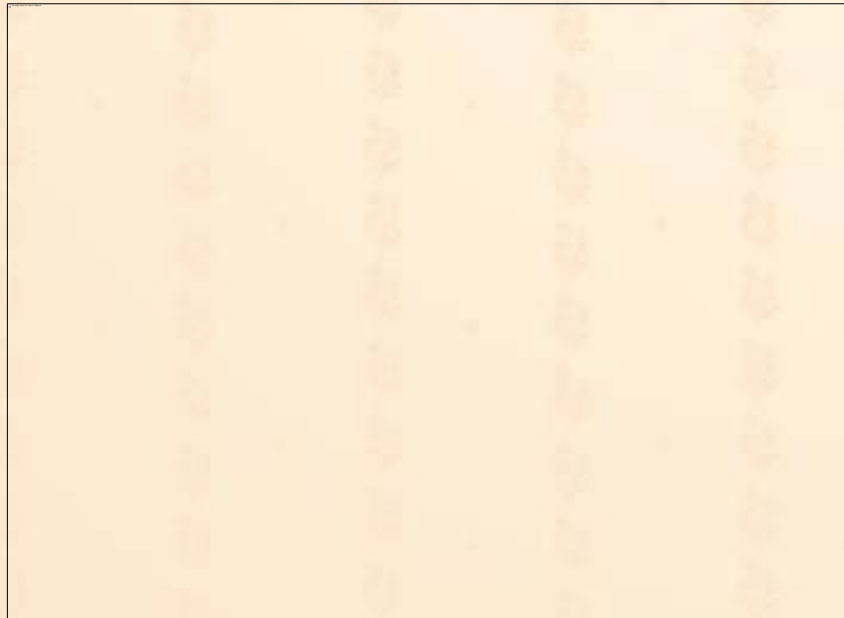
- Allow room to prune, thin, & harvest
- Roots Spread 2-3x Canopy Width
- Spray Drift Effects
- Consider clustering fruit trees and keeping them small
- Similar irrigation, bird netting, mulching, pollination

# *Espalier*



# Low-Maintenance Fruits

- Cane berries & blueberries
- Citrus (for now)
- Figs
- Jujubes
- Persimmons
- Plums & pluots
- Pomegranates



# Higher Maintenance 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
  
- Consider IPM  
with Practical solutions





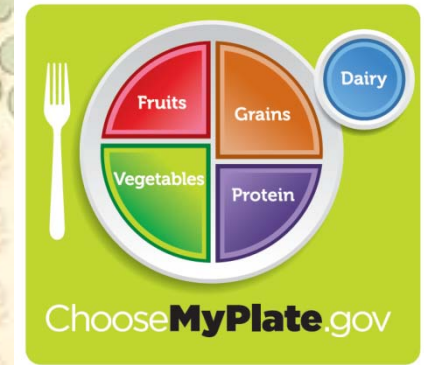
# Food Safety

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## Some Food Safety Points

- Fruits/vegetables are an important for healthy diets
- Fruits and vegetables can also be a source of foodborne illness



## ■ Preventing Contamination is Key

- Evaluate and mitigate risks from pre-plant to harvest the edible landscape.





# Good Agricultural Practices

- Focus is on RISK REDUCTION
  - Prevent contamination where possible
- 4 main sources of foodborne pathogens
  - Water
  - Wildlife or domestic animals
  - Soil amendments
    - *especially those derived from animals/people*

# Microbiological Safety of the Edible Landscape



## Planning

- Site Selection
- Water Source
- Facilities: toilets and handwashing



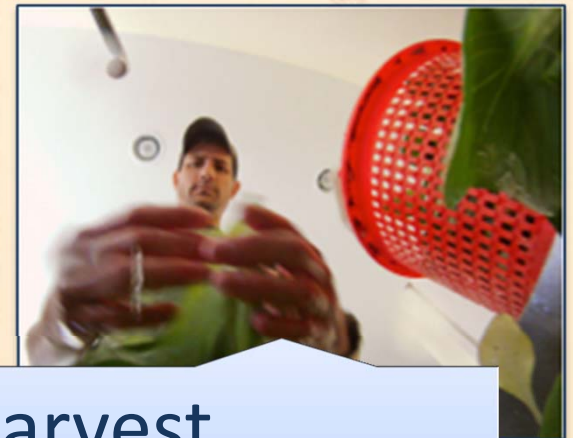
## Growth(PreHarvest)

- Water
- Soil Amendments and Supplements
- Animal access



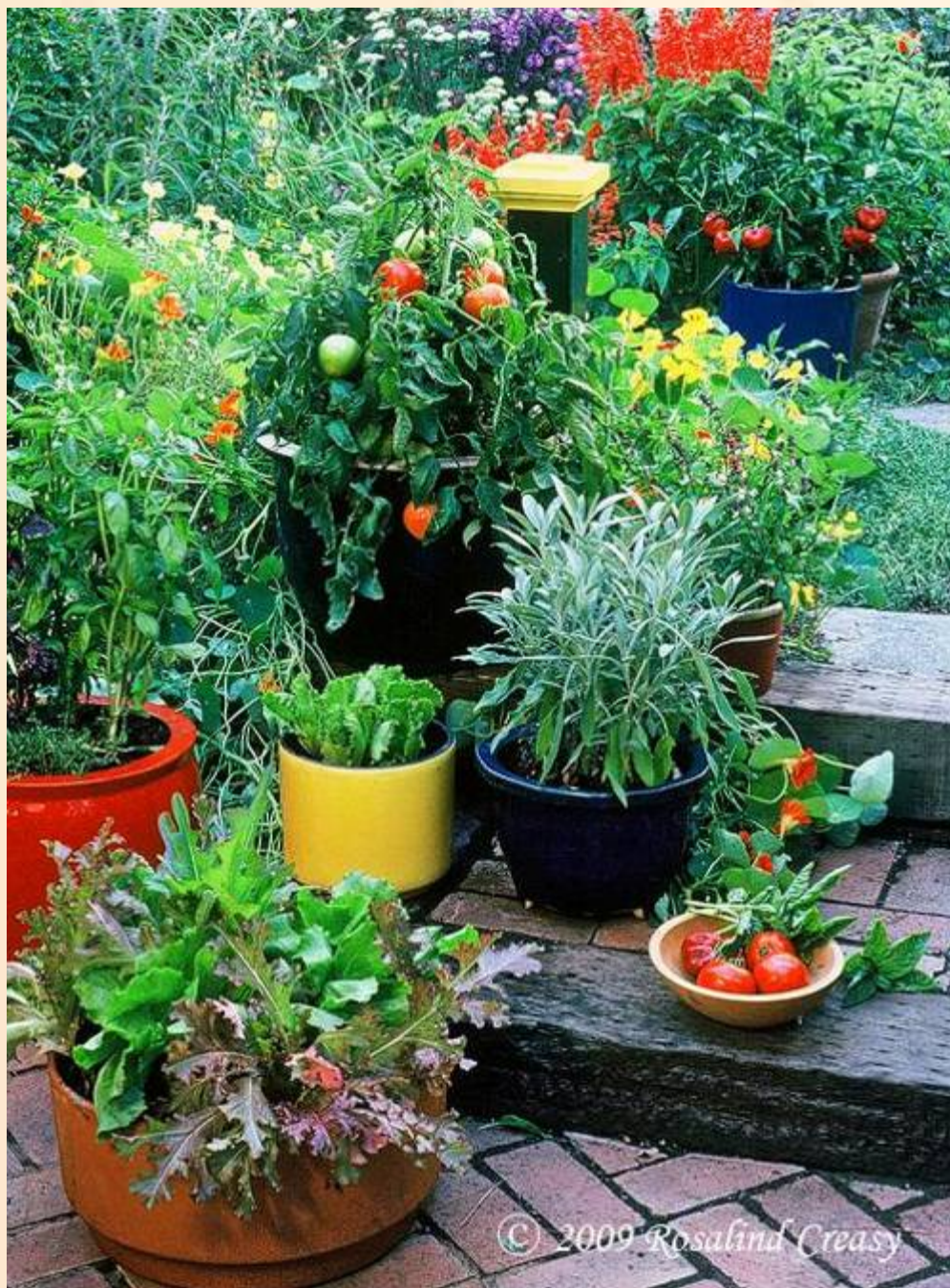
## Harvest

- Personal Hygiene and Handwashing
- Cleaning and Sanitation



## Post Harvest

- Washing Produce
- Food Storage and Preservation



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<http://myoutdoorfood.msu.edu/projects/index.html>

The Best of Both Worlds –  
Ornamental & Edible  
Inter-Planting Reduces Pests  
New Textures, Colors, Forms,  
Helps Grow What You Like Best  
Edible Landscapes are Fun for  
Everyone and Can Be the Norm:  
A Great Conversation Piece  
And They Bring  
the Mind to Peace....