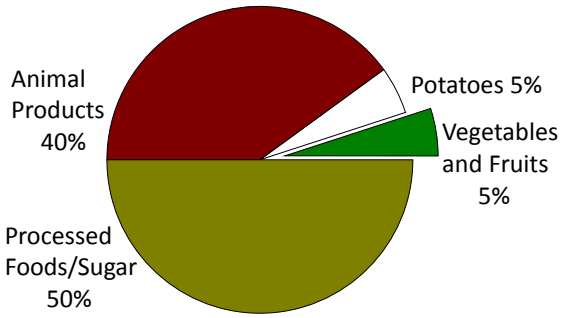
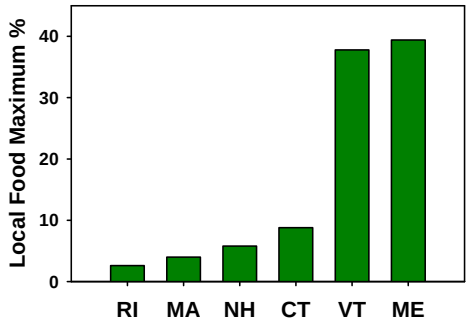
# Backyard Vegetable Gardens

**UMass Home Lawn & Garden Webpage**
ag.umass.edu/interest-areas/home-lawn-garden

## Where we get our Calories from:




## Local Food Sufficiency




## Planning a Vegetable Garden

- Planning what to plant - food preferences
- Garden size - depends on crop preferences; crop type (bush vs. tall or vine); annual vs. perennial.
- Location
  - sun/shade (most need 6-8 hours sun; warm season fruit veg. need full sun; root veg. little less; leafy veg. can tolerate some shade.
- Location
  - soil texture (water holding capacity/drainage).

## Bush vs. Vine Tomatoes

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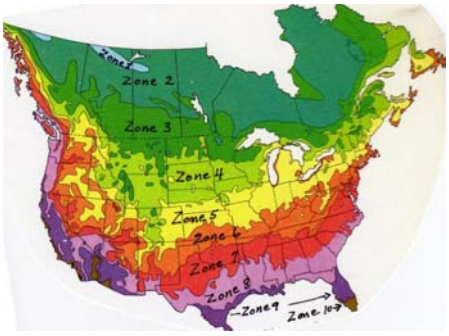
## Planning a Vegetable Garden

- Preparing the soil
  - Use a soil test (soiltest.umass.edu)
  - Apply limestone & fertilizer according to test results
  - Add 2” organic matter to top 6” soil; avoid sawdust
  - Turn the soil to incorporate lime, fertilizer & OM
- Starting a new garden in a lawn
  - Mow area short, lay at least 5 layer of wet news-paper on grass, spread 6”-8” of mixed compost and soil on newspaper, and plant without disturbing newspaper.

## A Permaculture Vegetable Garden


## When to Plant




## When to Plant

- Many plants grow well from seed if air and soil temperatures favor growth. Use transplants for faster establishment or where season is short.
- If you grow you own seedlings allow them to adjust to outdoor conditions (hardening off).
- Water plants before transplanting and plant at the same depth as they were in the container.
- Water so they do not wilt.

## When to Plant

- Cool season crops - can tolerate mild frost; plant 2 weeks before last expected frost or as soon as soil dries and warms.
- Peas, carrots, lettuce, broccoli, Brussels sprouts, cabbage, onion, and radishes.
- Seedling transplants of cooler weather crops (broccoli, cabbage, cauliflower, onions).

## When to Plant

- Warm season crops - plant after danger of frost and when day temp. & soil temp. get to 60-65F.
- Snap beans, corn, cucumbers, melons, pumpkins, and squash.
- Use transplants for tomato, pepper, eggplant, or melon seedlings.

## Planting the Vegetable Garden

- Preparing to Plant
  - Plant in straight rows, is easier to cultivate & weed.
  - Spread fertilizer on each side of row & rake into soil.
  - Use hoe or stick to make straight shallow furrow.
  - Space rows & seeds according to crop growth habit.

## Planting the Vegetable Garden

- Planting Seeds
  - Use seed size as a guide to planting depth.
  - As a guide plant seeds 2-4 times the width of the seed.
  - Plant small seeds (lettuce) no more than ¼" deep.
  - Plant large seeds (beans, peas, corn, squash 1-2".
  - Press soil gently, but firmly over seeds for good seed to soil contact.
  - Water if soil is not damp.


## Planting the Vegetable Garden

- Planting in Wide Rows or Shallow Beds

## Planting the Vegetable Garden

- Planting in Wide Rows or Shallow Beds
  - Can be used to plant leaf lettuce, carrots, beets, radish and onion.
  - Make a shallow bed up to 24" wide, by raking soil to the side.
  - Scatter seed evenly and not too densely.
  - Cover seeds with soil previously raked to the side.
  - Press soil gently with flat side of rake for good seed to soil contact.

## Planting the Vegetable Garden

- "Hill" Planting
  - Can be used for vine crops such as beans, squash, melons and cucumbers.
  - Plant 4-6 seeds within a 12-15" circle.
  - Thin seedlings to 3 per hill.
  - Water all newly planted seeds and keep soil moist until seedlings appear.

## Fertilizing Your Garden

- Before adding fertilizer determine the need.
- Take a soil sample to determine pH, organic matter, and major nutrients but not N.
- Send soil sample to soil testing lab and follow the recommendations for lime, P and K.
- UMass Soil and Plant Testing Lab. ($15/sample)
  http://soiltest.umass.edu

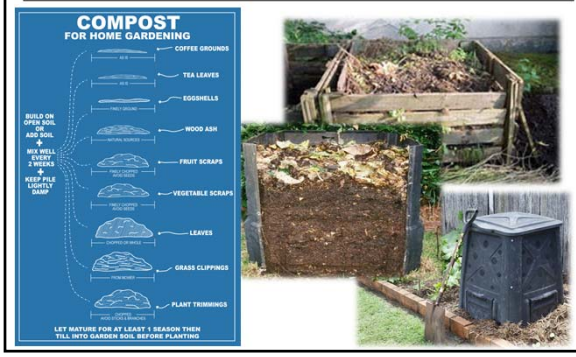
## Fertilizing Your Garden

- Organic Fertilizer - must occur naturally
  - N - Chilean nitrate ($NaNO_3$), manure, compost, blood meal, legumes cover crops vs. fertilizer N
  - P - Rock phosphate, bone meal vs. super phosphate
  - K - green sand, potassium sulfate vs. potash
  - Ca & Mg from dolomite lime, Ca only in calcitic lime
- Manure and compost supply major and minor nutrients but manure can contain pathogens - apply 120 days before harvesting food crops.

## Fertilizing Your Garden

- Compost
  - Can supply most or even all nutrients.
  - Release of nutrients slow and may take years.
  - Is an excellent soil conditioner.
  - Helps retain moisture and improves drainage.
  - Can help nutrient holding capacity of soil.
  - Provides food for beneficial soil organisms.
  - Improves physical properties but can be over applied.

## Fertilizing Your Garden

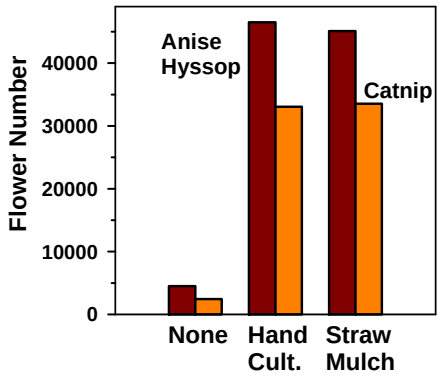




## The Problem of Weeds

- Weeds often become the problem that ends many home garden efforts.
- Hand weeding with a hoe or hands must be maintained or weeds will become a large problem.
- Blocking light to weed seeds or seedlings can suppress their growth.
- Such mulches can be newspaper, black plastic, and grass clippings.
- Herbicides are not practical because of mixed plantings.

## The Problem of Weeds



## The Problem of Diseases

- Diseases occur when environmental conditions are suitable for pathogens to develop on susceptible plants.
- Some pathogens attack a wide variety of plants and others attack only specific plants.
- Some pathogens can attack all plant parts, while other attack only selected plant parts.
- Include fungi, water molds, bacteria, viruses and nematodes.

## The Problem of Diseases

## The Problem of Diseases

- Easiest and most economical way to manage plant disease in the home garden is by maintaining vigorously growing, healthy plants.
- Weakened plants are more susceptible to infection by disease-causing agents.
- Promote plant vigor. Avoid over-watering or planting in poorly drained soils.
- Practice sanitation, use resistant varieties, rotate crops, add OM, practice exclusion and use sprays as last option.

## The Problem of Insects

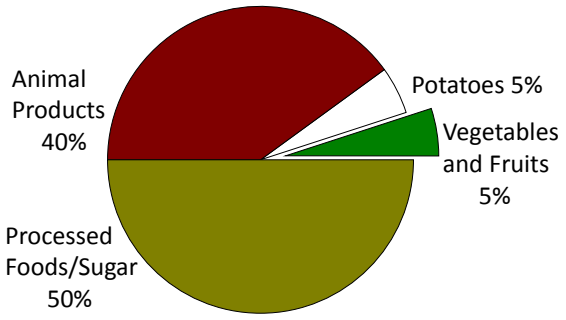
- Beneficial insects pollinate plants, destroy pests, or improve the soil by scavenging and burrowing.
- Some insects cause problems & become pests.
- Learn to recognize insects if a destructive species, determine whether it is causing serious damage.
- Chemical control can cause additional problems by killing natural enemies of many pests.
- Most plants can tolerate some insect feeding, and pests can often be washed off after harvest.

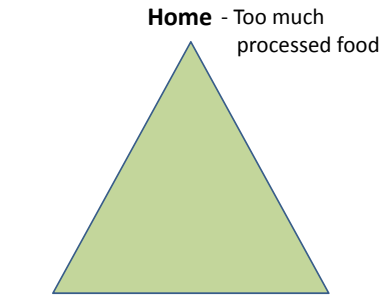
## The Problem of Insects and other Pests

- Practice sanitation, rotations, plant healthy vigorous growing crops, hand pick certain insects, and use barriers (collars and row covers).
- Also, use traps and lures, biological control and as last option pesticides.

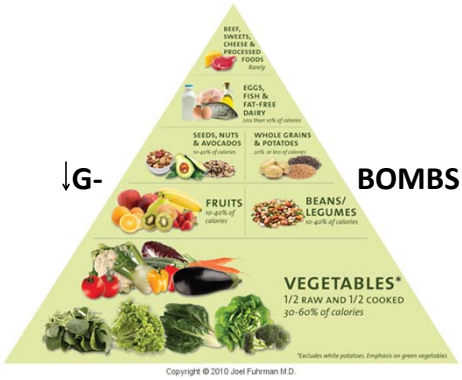
## Time for a Break

## Where we get our Calories from:




## Fuhrman Food Pyramid




## Remember the G-BOMBS


sherbert@cns.umass.edu