Warm Season Vegetables
Fabaceae - The Bean Family
The Bean Family

- Formerly known as Leguminosae and called legumes
- A large family that ranges from frost tolerant to warm season plants
- Fruit is a single pod with seeds
- Large seeds that may have a hard seed coat
- Have a symbiotic bacterial association that fixes nitrogen from the atmosphere
Legume Trivia
Other members of the Bean Family

• Kudzu
• Mimosa
• Alfalfa
• Lupines and Blue Bonnets
• Jack Bean
• Mesquite

• Indigo
• Clover
• Kentucky Coffee Tree
• Red Bud
• Locust
• Wisteria
Nitrogen Fixation

• Legumes have a symbiotic relationship with *Rhizobium sp.* bacteria.
• The plant supplies carbohydrates to the bacterium and the bacteria supplies nitrogen to the plant.

• Critical for world wide plant protein production.
Nodules on Root

- Nodulation describes the structure that forms with symbiosis of the bacteria and the roots of the plant.
What Do We Eat?

- *Phaseolus vulgaris*, the American beans
- snap, pole, runner and French, pinto and dry beans.
- *Phaseolus lunatus*, Lima bean or Butter Bean
- *Archis hypogaea* – the Peanut

- *Vicia faba*, Fava bean
- *Glycine max*, Soy bean
- *Pisum sativum*, the English Pea
- *Lens culinaris*, Lentil
- *Vigna sp.*, So. Pea, adzuki, mung, asparagus bean
Beans - the Good and the Bad

The Bad

• Phytohemagglutins – Prevent blood clotting
• Allergic reactions peanuts and fava beans
• Don’t eat large quantities of uncooked beans.
Bean Pods:
The Perfect Bean-
19 days from flower to harvest.
Determinate or Indeterminate

Bush

Pole
Types of beans

Yard Long
English Peas

Snow Peas
Southern Peas

New

Old
Southern Peas –
Seedling Problems

• Acid soil and or low temperatures can cause a chlorosis.
Bean Problems

- A fungal rot on the pods caused by humid conditions
- Tip rot caused by pods touching the soil
Insect Problems

• Aphids
• Bean Beatles
• Grasshoppers
• Weevils
Insect Problems

• The insect thrip causes foliar damage
Poaceae or Gramineae
Grass Family - Corn
Corn

- Cultivated for more than 7000 years
- First grown in southern Mexico
Corn

- Standard Sweet Corn (Su) 2X sweeter than field corn
- Super sweet
  - Se will last 4 days or more
- Sugar Enhanced
  - SU – isolate from the above, retains sweetness
Corn

- Wind Pollinated
- Plant in short rows
- Heavy feeder
Corn
Problems
The Family Cucurbitaceae – the Squash/Gourd Family
Cucurbitacaea Family

- Watermelon
- Cantaloupe
- Winter melons
- Cucumbers
- Gourds
- Pumpkins
- Squash
- Calabaza

- Armenian melon
- Snake cucumber
- Lemon cucumber
- Vining Okra
- Chayote
- Bitter Melon
- Cucuzzi
- Luffa
Cucurbit flowers
Pollinators in Your Garden
Hand pollinating
Growing Cucurbits
Cultural Requirements

• Light
• Space
• Fertility
• Water
Cucurbit Family -- Culture

- **Planting** -- After Danger of Frost
- **Spacing** -- 12 to 48 “ by 48 to 96”
- **Hardiness** -- Very Tender Annual
- **Fertility** -- Medium to Heavy Feeder
Cucurbit Family -- Fertilization

- Lime Soil pH 6
- Preplant ½ Cup of 10-20-10 per 10 feet row
- Use Transplant Starter Solution
- Medium to Heavy Feeder
Fruit Growth

• The mature fruit inhibits the growth of the young developing fruit.
Benefit of Mulches

- Mulches are effective for all cucurbitis.
- Controls water loss
- Controls weeds
- Promotes faster growth
- Helps to control diseases
Effect of Mulch and Temperature

Plastic Mulch

Bare Soil
A Mature Melon
Melon Fruit

Cantaloupe

Honeydew
Summer Squash Types

- Scallop or Patty Pan
- Cousa
- Yellow & Green Zucchini
- Yellow crookneck
Summer Squash
Summer Squash  --  Culture

• Planting  -- After Danger of Frost
  » Soil Temperature Above 60deg F.

• Spacing  -- 24 to 36 “ by 48 to 60”

• Hardiness  -- Very Tender Annual

• Fertility  -- Medium to Heavy Feeder
Winter Squash Types

- Acorn
- Butternut
- Buttercup
- Hubbard
- Spaghetti
- Cushaw

Buttercup
Winter Squash

butternut

Spaghetti
Pumpkins Big and Small
Problems

Squash vine borer
Fruit and Foliar Diseases

Belly Rot of Fruit

Anthracnose
Problems

Fruit rot

anthracnose
The Solanaceae / Nightshade Family

Eggplant
eggplants
Eggplants
Flea beetle damage
Solanaceae - Peppers
Peppers
Pepper Transplants
Look at the top of the plant.
Support the Plants
Pepper Types

- Sweet Peppers
  - Bell
  - Pimento
  - Italian Ramshorn
  - Banana
  - Cubanelle

- Hot Peppers
  - Jalapeno
  - Ancho Chili
  - Anaheim
  - Serrano
  - Cayenne
  - Habenero
Malvaceae

- Hibiscus
- Okra
- Cotton
Young Seedling
Flower
Developing Pods
Field Ready to Pick
Grading Okra
Convulvulaceae
Morning-glory family
Sweet Potato History

• Native of Brazil
• Vegetatively Propagated
• Shoots (Slips) Growing From a Root
Roots Ready to Dig
Curing and Storing

- 80-85 degrees for 7-10 days with high humidity

- Store in a cool spot
  - 55-60 degrees