




In the Name of God





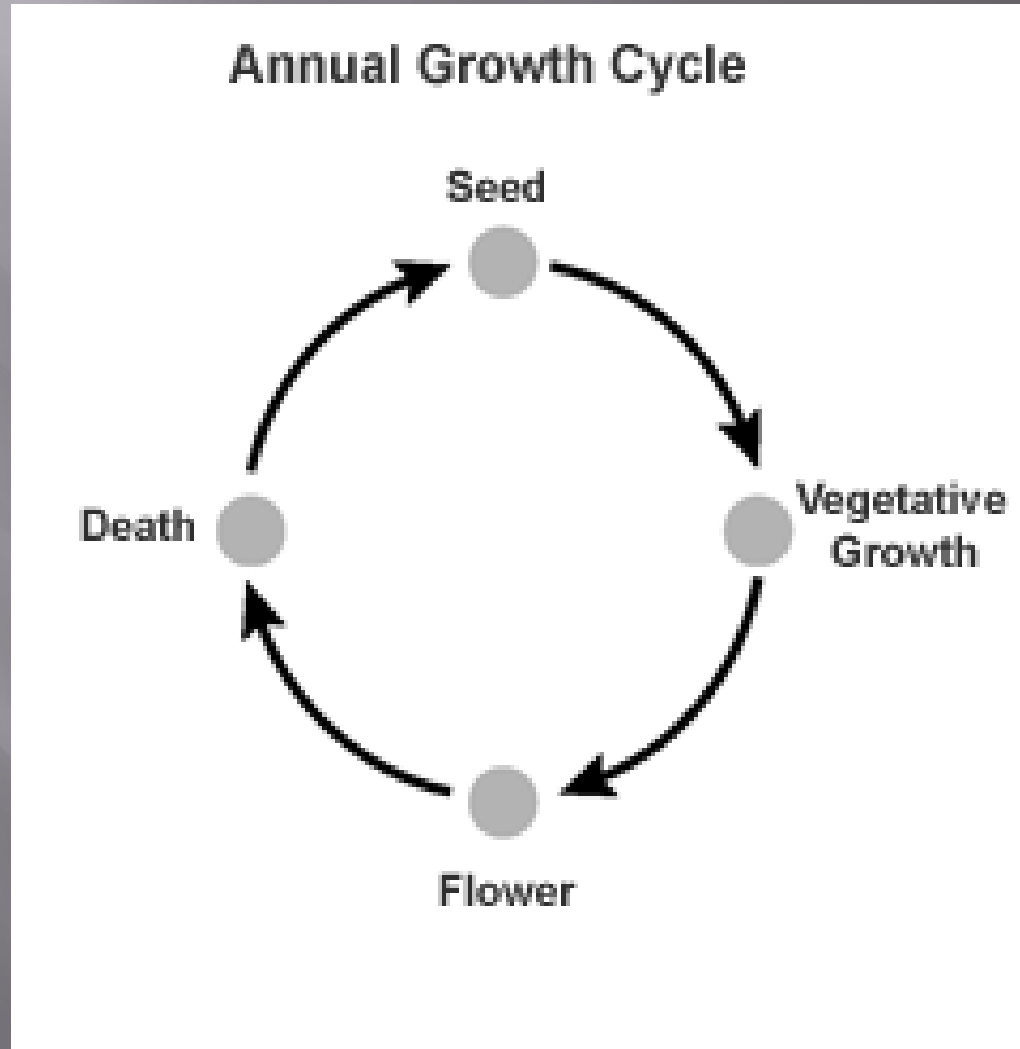
# Horticulture

Exploring A Wonderful Industry!

# HORTICULTURAL PLANT CLASSIFICATION



# Annual Growth Cycle





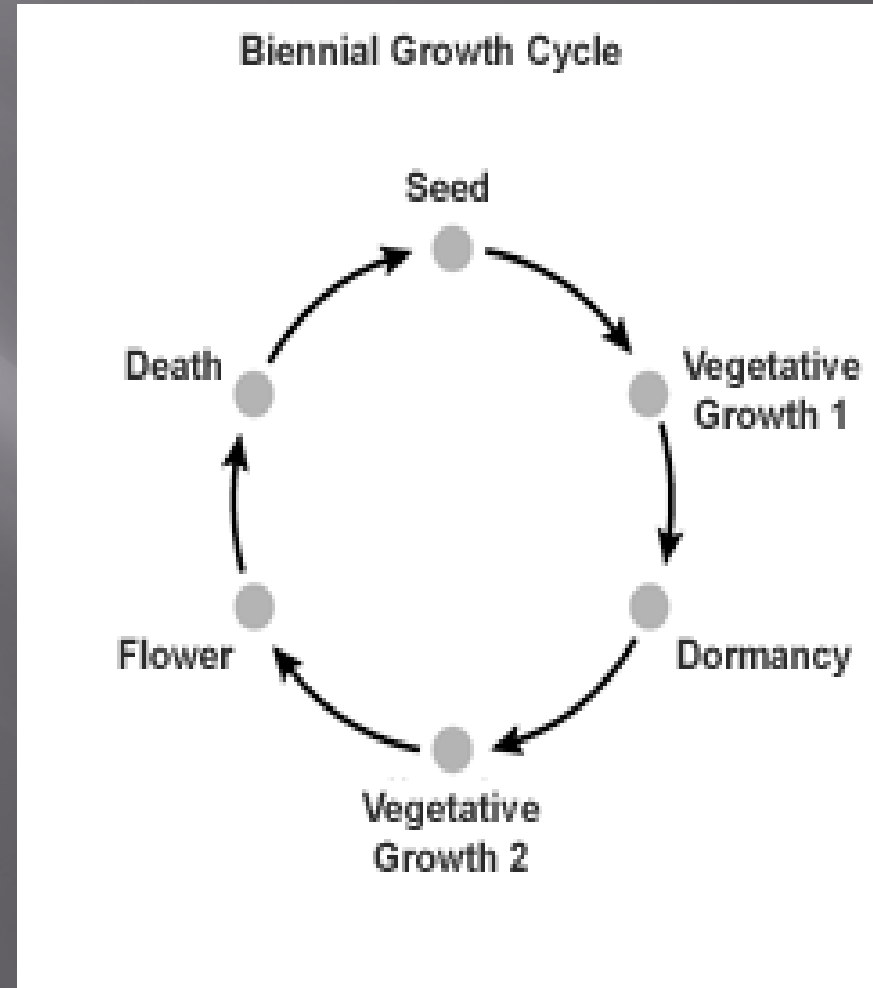
- ▣ Annuals – complete their life cycle in one season.

Examples: Marigold, Petunias, and many more!



# Biennial Growth Cycle

- Sometimes biennials go from seed germination to seed production in only one growing season.
- This situation occurs when extreme environmental conditions (e.g. drought or temperature variation)
  - A plant will pass rapidly through the equivalent of two growing seasons.
  - This phenomenon is referred to as bolting.
  - Sometimes bolting occurs when biennial plant starts are exposed to a cold spell before being planted in the garden.



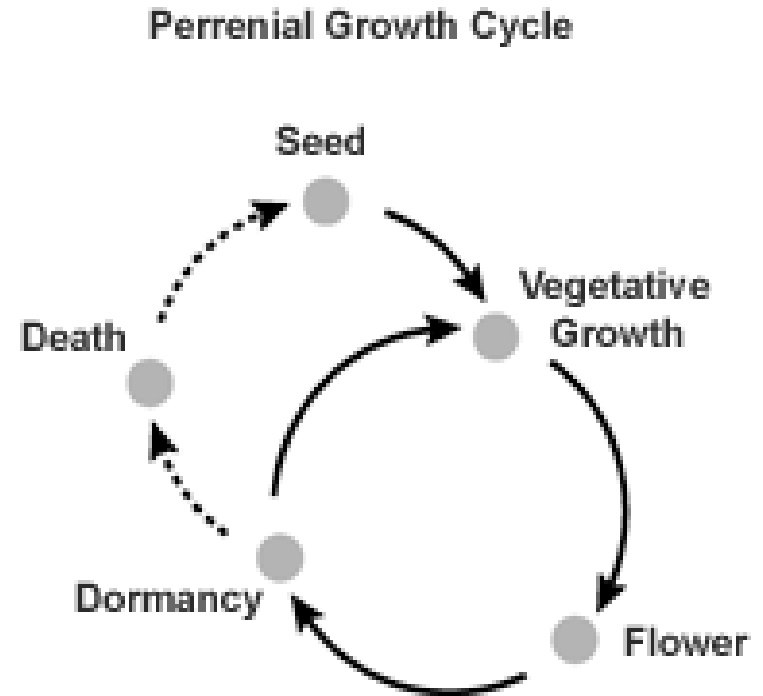
Biennials -complete their life cycle in two seasons. (first season vegetative growth, second season reproduce)

- ▣ Examples: Holly Hocks, Fox Glove



# Perennial Life Cycle

- In a perennial life cycle, seed production can occur every year or every other year.
- Pruning may be necessary in some perennials (particularly fruit trees and berries) in order to have annual production.





# Perennials

- ▣ Plants that grow year after year.

Examples: Roses, Shasta Daisy





**Hardy** plants can tolerate frost and some actually grow best in cool weather, like sweet peas. Hardy annuals usually have a shorter growing season and can be direct seeded outdoors early in the spring and will flower fairly rapidly from seed.





**Tender** plants are plants that cannot tolerate frost at all. These tropical or heat loving plants do not grow well in cool temperatures and require a long growing season, so they are started indoors well ahead of the last frost date. *Begonia* Semperflorens-Cultorum Hybrids, wax or fibrous begonias are tender annuals.

# Cool vs Warm Season Crops

- Peas
- Onions
- Lettuce
- Cabbage
- Broccoli
- Potatoes
- Beets
- Carrots

- Tomatoes
- Peppers
- Beans
- Sweetcorn
- Melons
- Cucumbers
- Pumpkins
- Eggplant

# Cool Season Vegetables

## Very Hardy

- ▣ Peas
- ▣ Onions
- ▣ Cabbage
- ▣ Broccoli
- ▣ Radish
- ▣ Spinach
- ▣ Romaine Lettuce

## Hardy or Half-Hardy

- ▣ Cauliflower
- ▣ Beets
- ▣ Carrots
- ▣ Potato
- ▣ Lettuce

All grow best in cool weather. Very hardy will withstand severe freezes and germinate/establish roots under lower temperatures



# Woody plants



Trees



*How about some shrub to go with that mulch*

Shrub



Lianas

# Herbaceous plants



herb



vine

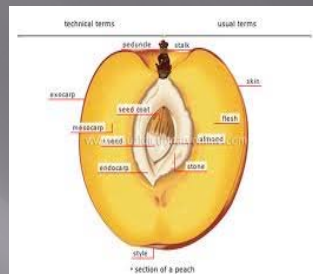
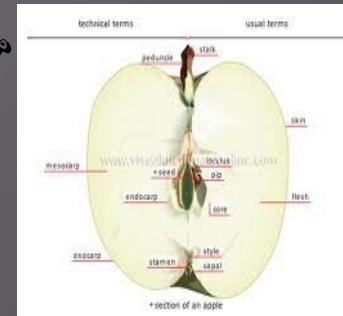




# Temperate fruits

## □ Pome fruits

میوه ای که در بخش مرکزی آن چند برچه متصل به هم وجود دارد و دارای تعدادی بذر هستند



## □ Stone fruits

میوه ای گوشتی، ساده و ناشکرفا با درون بر سخت



## □ Multiple fruits

میوه ای که از چند گل جدا از هم بر روی یک گل آذین متراکم به وجود می آید

## □ Nuts

میوه ای خشک و ناشکرفا که به طور معمول تک بذر است و فرابر چوبی دارد



## □ Small fruits

میوه هایی که به صورت بوته یا درختچه بوده و اغلب دارای میوه های ریز هستند



# Tropical and Subtropical fruits

▣ Evergreen trees



▣ Deciduous trees



▣ Herbs





# Ornamentals

- ▣ Woody plants

- ▣ Trees

- ▣ Shrubs

- ▣ Herbaceous

- ▣ Perennials

- ▣ Biennials

- ▣ Annuals



▣ Perennials



▣ Biennials



▣ Annuals





# Vegetables

- ❑ Root crops
- ❑ Bulb crops
- ❑ Tuber crops
- ❑ Vine crops
- ❑ Cole crops
- ❑ Greens
- ❑ Salad crops
- ❑ Solanaceous crops
- ❑ Legumes
- ❑ Herbs
- ❑ Miscellaneous



▣ Liliaceae



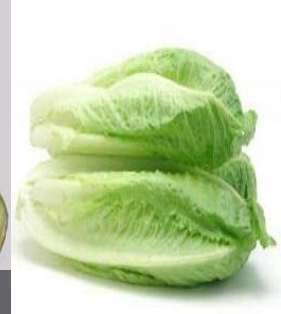
▣ Chenopodiaceae



▣ Umbeliferae



▣ Asteraceae



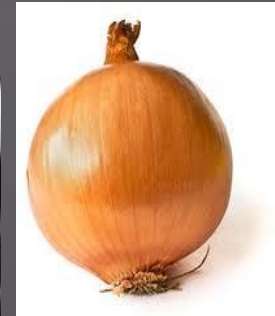
▣ Polygonaceae



▣ Brassicaceae



▣ Amaryllidaceae



▣ Chenopodiaceae



▣ Brassicaceae



▣ Convolvulaceae



▣ Umbeliferae



▣ Asteraceae



▣ Solanaceae





## Cool Season Vegetables

These vegetables prefer cool growing temperatures (60°F to 80°F) and lose quality in hot weather. They are often replanted mid-summer for fall harvest.

### Hardy Vegetable

**Crops:** broccoli, cabbage, kohlrabi, onions, lettuce, peas, radish, spinach, turnips

**Temperatures:** Hardy vegetables grow with daytime temperatures as low as 40°F and may survive a frosty nip.

When to plant:

- Based on soil temperatures, refer to Table 1.
- Plant as soon as soil adequately dries in the spring.
- These crops may be planted as early as 2-4 weeks before the date of the average last spring frost.

### Semi-Hardy Vegetables

**Crops:** beets, carrots, cauliflower, parsley, parsnips, potatoes, and Swiss chard

**Temperatures:** Semi-hardy vegetables grow with minimum daytime temperatures of 40°F to 50°F, but are less tolerant of a frosty night.



## **Warm Season Vegetables**

Warm season vegetables prefer summer-like weather with temperatures between 70°F and 95°F. They are intolerant of frost and may be sensitive to cool spring winds.

### **Tender Vegetables**

**Crops: beans, celery, corn, cucumbers, New Zealand spinach, summer squash**

Temperatures: Tender vegetables grow with a daytime temperature above 55°F, and are intolerant of frost.

When to plant:

- Based on soil temperature, refer to Table 1.
- Soil is adequately dry to work.
- These crops may be planted (from seed) around the date of the average last spring frost. Transplants of cucumbers and summer squash without frost protection should be delayed until frost potential is over.

### **Very Tender Vegetables**

**Crop: lima beans, cantaloupe, eggplant, pepper, pumpkin, winter squash and pumpkins, tomato, and watermelon**

Temperatures: Very tender vegetables are not only intolerant of frost, but also cool spring winds. They need daytime temperatures above 60°F, and prefer temperatures of 70°F to 95°F. A week of daytime temperatures below 55°F, may stunt the crop.

▣ Beverage plants



▣ Latex plants



▣ Medicinal plants



▣ Spice plants

