



# PEST CONTROL

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# HISTORY OF PEST MANAGEMENT

- A REVIEW OF CONTROL METHODS PRIOR TO D.D.T
- CONTROL METHODS WITH D.D.T
- PROBLEMS THAT DEVELOPED AS A RESULT OF D.D.T
- CURRENT BEST PRACTICE CALLED I.P.M (INTEGRATED PEST MANAGEMENT)
  - PHYSICAL CONTROL
  - CULTURAL CONTROL
  - BIOLOGICAL CONTROL
  - CHEMICAL CONTROL

# DEFINITIONS

BIOTIC – DISEASE CAUSED BY A LIVING ORGANISM

ABIOTIC – DISEASE CAUSED BY NATURE

DISEASE / PEST IS ANYTHING THAT:

- ❑ COMPETES WITH HUMANS, DOMESTIC ANIMALS, OR CROPS FOR FOOD, FEED, OR WATER
- ❑ INJURES HUMANS, ANIMALS, CROPS, STRUCTURES, OR POSSESSIONS
- ❑ SPREADS DISEASE TO HUMANS, DOMESTIC ANIMALS, OR CROPS
- ❑ ANNOYS HUMANS OR DOMESTIC ANIMALS

BIOTIC DISEASE / PESTS CAN BE PLACED IN FOUR MAIN CATEGORIES:

- ❑ INSECTS (AND RELATED ANIMALS)
- ❑ PLANT DISEASE AGENTS
  - ❑ BACTERIA
  - ❑ VIRUS
  - ❑ FUNGUS

# DISEASE

- A Disease is anything that causes a plant to grow or appear abnormal

# NATURAL FORCES AFFECTING PEST POPULATION

- CLIMATE
- NATURAL ENEMIES
- TOPOGRAPHY
- FOOD & WATER SUPPLY
- TEMPERATURE

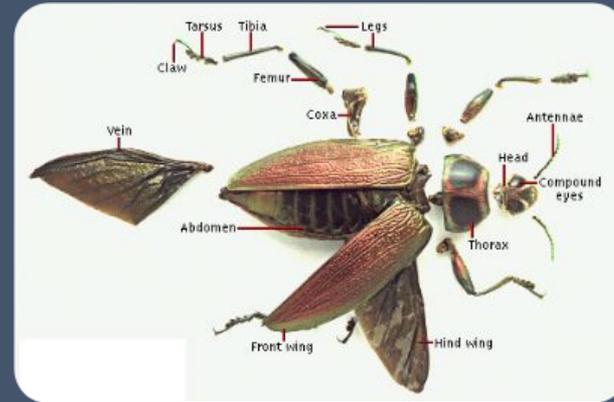
# INSECT DEVELOPMENT

- NO METAMORPHOSIS
- GRADUAL METAMORPHOSIS
- INCOMPLETE METAMORPHOSIS
- COMPLETE METAMORPHOSIS

# INSECT CHARACTERISTICS

## SIX LEGS

- BODY CONSISTS OF:
  - HEAD
  - THORAX
  - ABDOMEN
- ALL GO THROUGH METAMORPHOSIS
- TYPES OF MOUTHPARTS:
  - CHEWING
  - PIERCING / SUCKING
  - SPONGING
  - SIPHONING



# INSECT CONTROL STRATEGY

- HOST RESISTANCE
- BIOLOGICAL CONTROL
- CULTURAL CONTROL
- MECHANICAL CONTROL
- SANITATION
- CHEMICAL CONTROL

# CONTROL TYPES

TRAPS

LIGHTS

HEAT & COLD

□ FIRE & ELECTROCUTION

□ BIOLOGICAL CONTROL:

□ PREDATORS & PARASITES

□ PATHOGENS

□ STERILE MALES

□ PHEROMONES

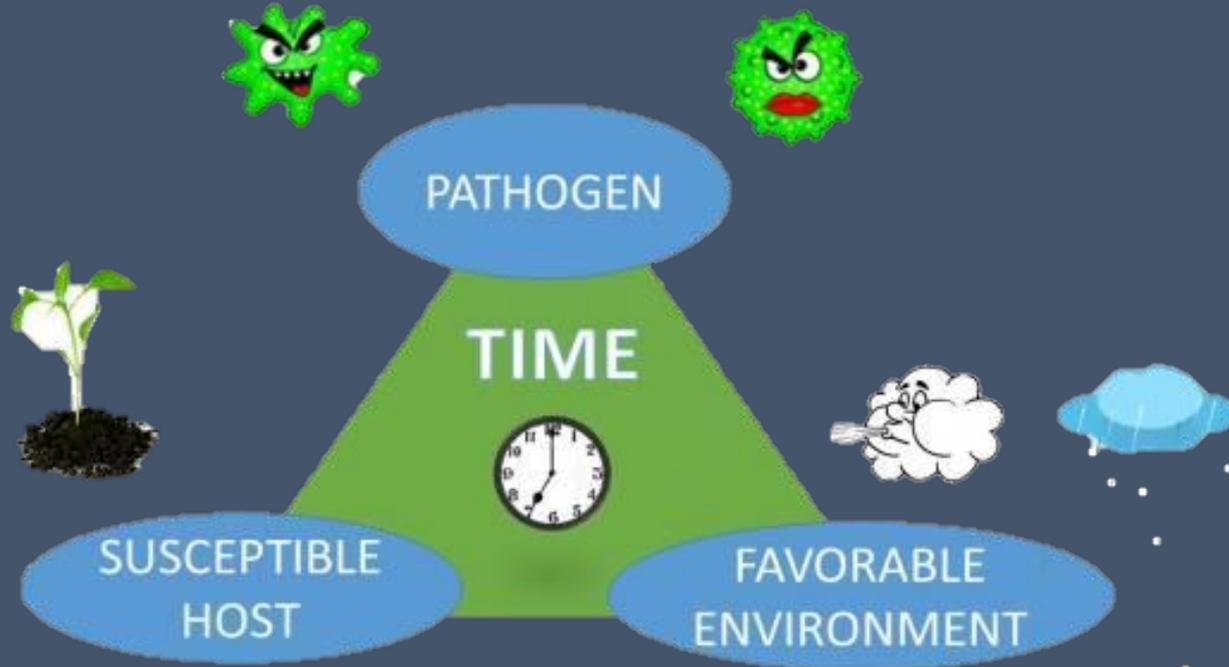
□ CULTURAL CONTROL:

□ CROP ROTATION

□ TRAP CROP / COMPANION PLANTS

□ DELAYING OF PLANTING

# DISEASE TRIANGLE



# BROWN ROT



# LIABILITY ISSUES



# C-DOM MAY LEAD TO TREE FAILURE





















# LIGHTNING DAMAGE



# ICE STORM DAMAGE- TULSA 2007







# CEDAR APPLE RUST

































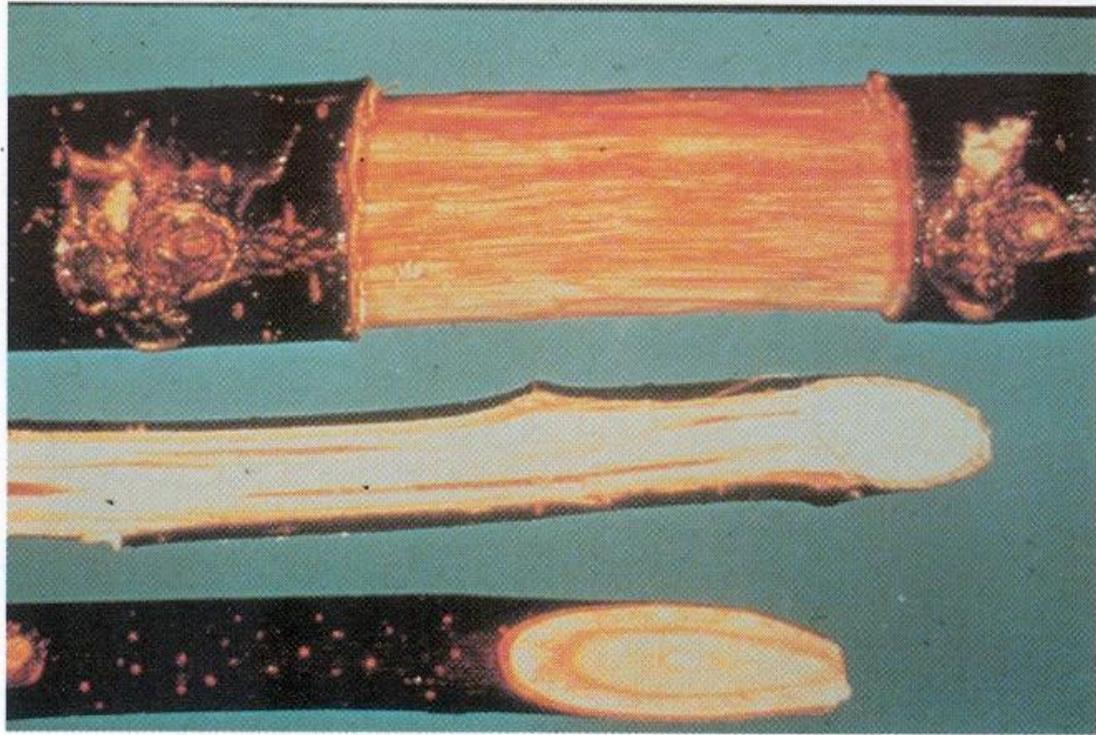




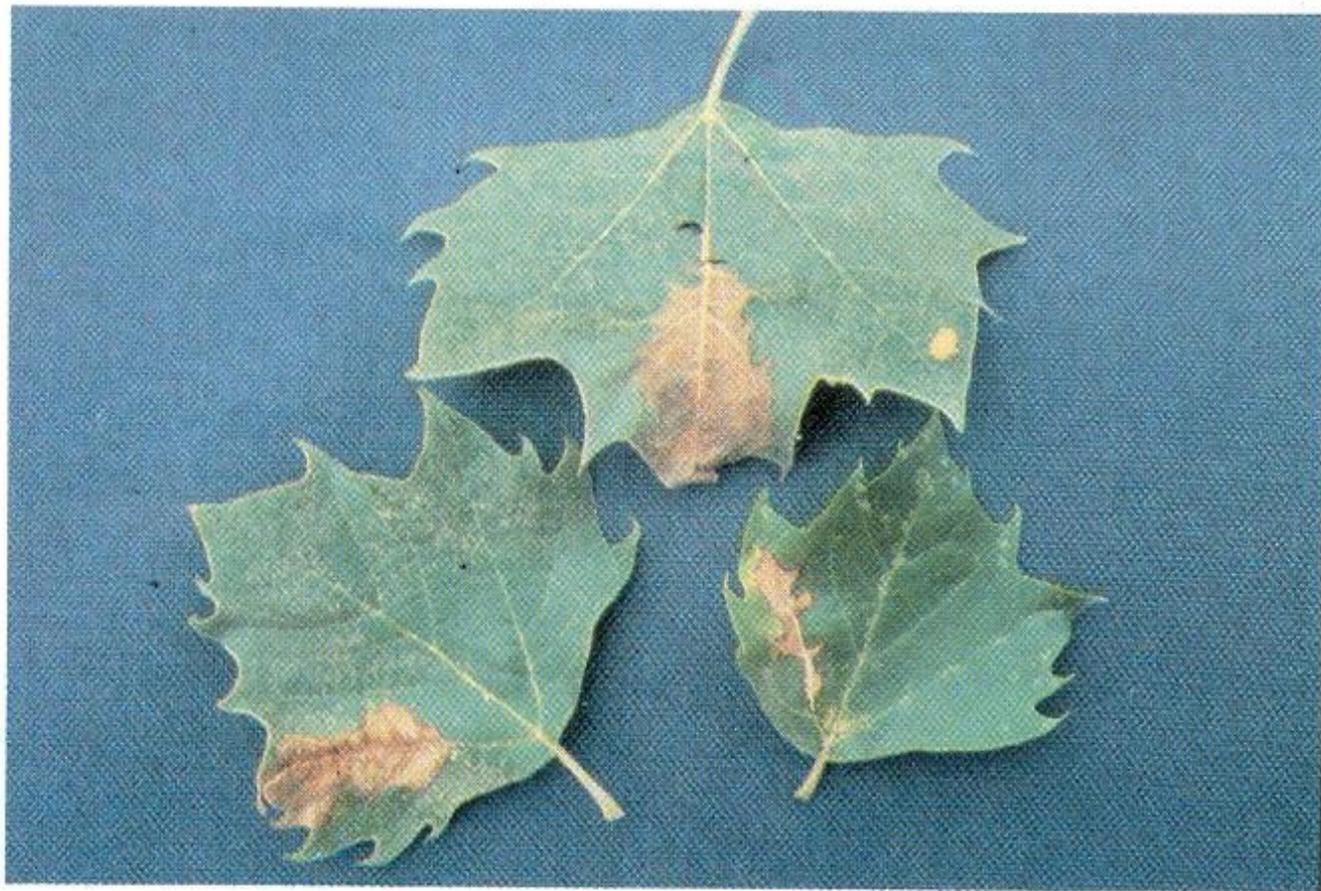




**Figure 4-4. Dutch elm disease (early symptoms) on American elm.**



**Figure 4-5. Diagnostic vascular discoloration of Dutch elm disease.**



**Figure 4-20. Anthracnose symptoms on sycamore leaves.**

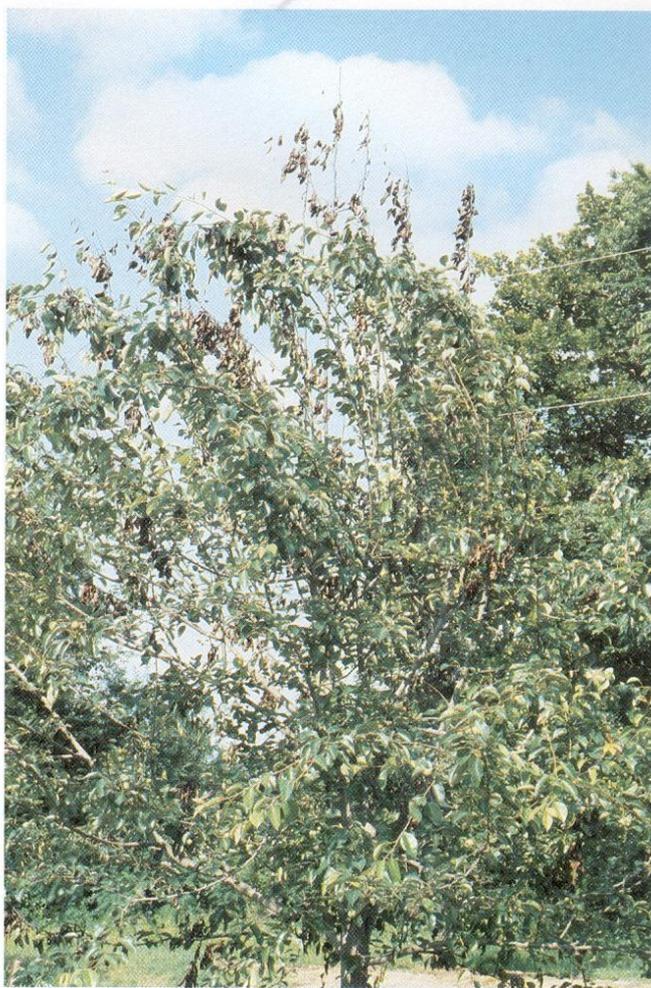


Figure 4-10. Fire blight on apple.

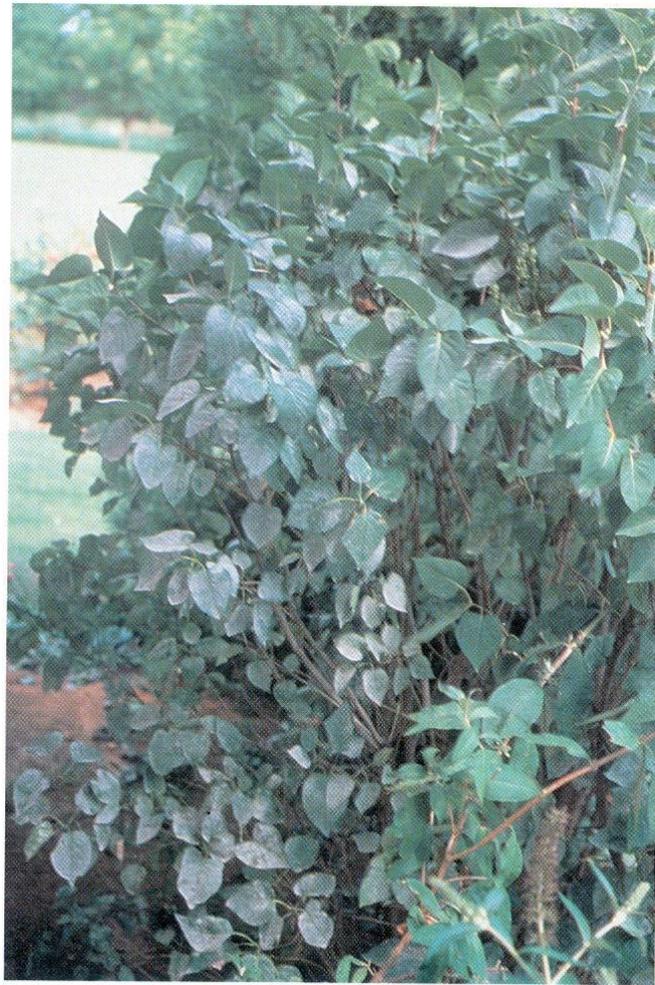


Figure 4-22. Powdery mildew on lilac.



**Figure 4-29. Mosaic patterns of rose mosaic virus on rose.**

# VERTEBRATE PESTS- BEAVER



LESS EXPENSIVE & EASY TO HANDLE/TRANSPORT/STORE  
LITTLE AGITATION

# PESTICIDE FORMULATIONS

LESS VISIBLE RESIDUE ON PRODUCE

## DISADVANTAGES

- ❑ EASY TO MIX INCORRECTLY
- ❑ PHYTOTOXICITY
- ❑ GREATER HAZARD
- ❑ EASILY ABSORBED THROUGH SKIN
- ❑ CAN BE CORROSIVE

## ❑ WETTABLE POWDER (WP)

### ❑ ADVANTAGES

- ❑ LOW COST
- ❑ EASY TO STORE/TRANSPORT/HANDLE
- ❑ LOW PHYTOTOXICITY & HAZARD

# PESTICIDE FORMULATIONS

■ EASY TO STORE  
■ CONVENIENT TO BUT SMALL AMOUNTS

■ RETAIN POTENCY OVER LONG TIME

## (CONT)

### DISADVANTAGES

- EXPENSIVE
- LIMITED USE
- INHALATION HAZARD
- HAZARDOUS IF PUNCTURED , OVERHEATED, OR USED NEAR AN OPEN FLAME

### □ BAIT

#### □ ADVANTAGES

- READY TO USE
- ENTIRE AREA NEED NOT BE COVERED
- CONTROLS PESTS THAT MOVE IN AND OUT OF AN AREA



