



# Plant Disorders

## Symptoms, Causes, Diseases, Insects

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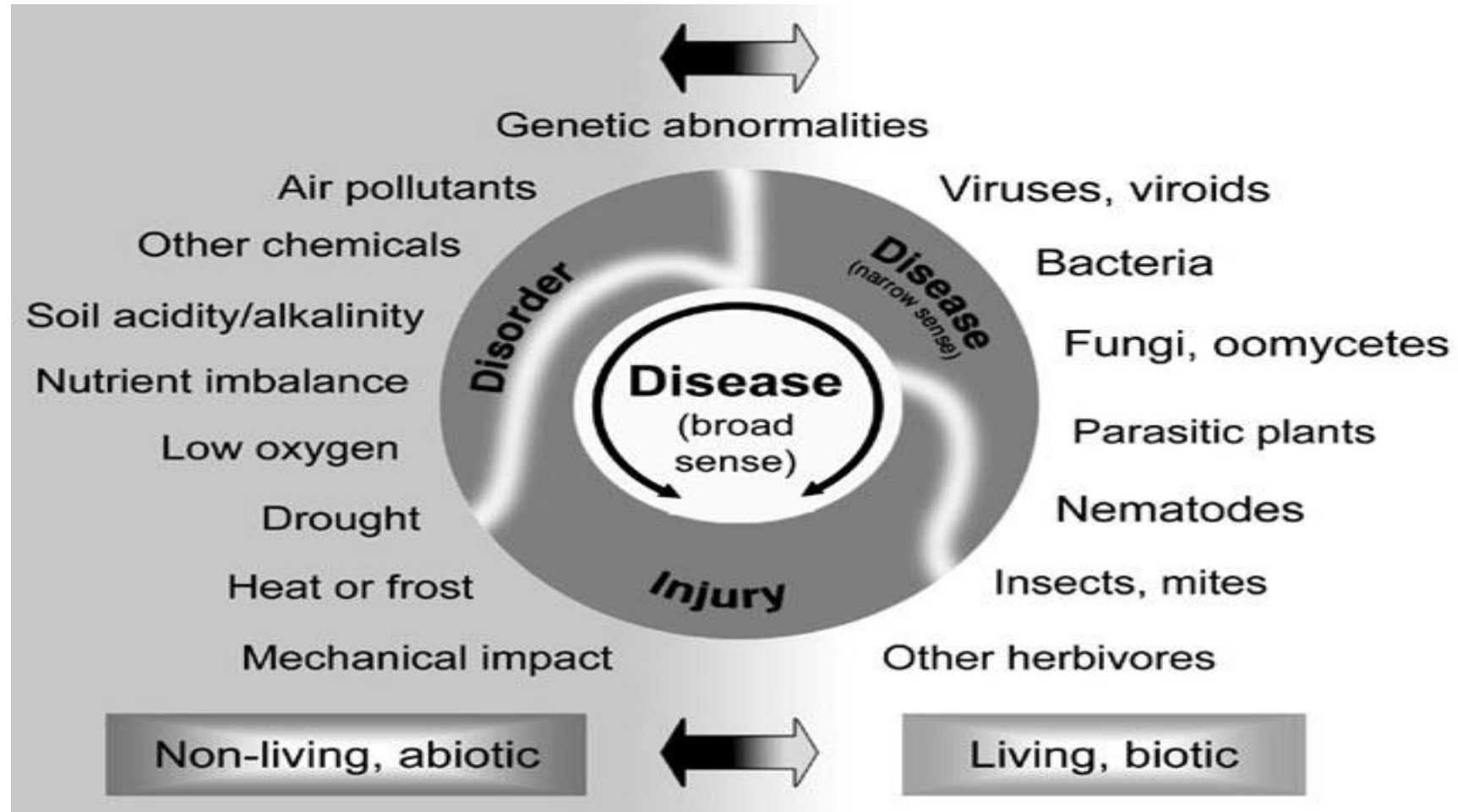
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# What's WRONG!!!

- Symptoms appearing ... ask yourself what happened
- Can you self-diagnose?
- Bring to Extension Office or Submit to Plant Diagnostic Lab?
- Is it a disease?  
Cultural/environmental? Insect damage?

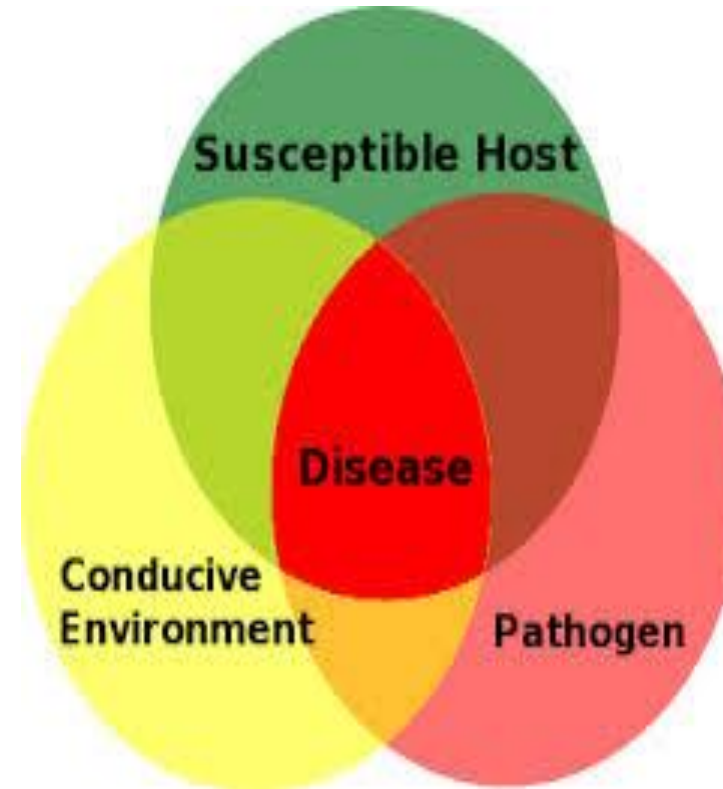


# Is it a disease or disorder?



# Disease Triangle

- Three (3) factors must be present and conducive for a plant disease to occur:
  - 1) Host plant: consider its resistance, stress, age, and disposition.
  - 2) Pathogen: condition of pathogen, virulence, population, etc...
  - 3) Environmental Condition: Favorable for pathogen to infect
    - 1) Foliar disease: temperature and humidity
    - 2) Soil disease: temperature, pH, compaction (O<sub>2</sub>, water, plant health), texture for nematodes



# Abiotic Disorder

- **DOES NOT SPREAD!**
- More regular in pattern and shape
- Broader in scope or percentage of plant
- Soil compaction
- Watering
- Human caused/mechanical damage
- Weather damage





# Leaf scorch

- **Drought stress**
- Salt damage
- Over Fertilization
- Warm windy weather
- Uneven watering
- Brown leaf margins



# Drought stress

- Evergreens (~30% of samples submitted this year)
  - Pines





# Drought stress

- Ash





# Winter Burn

- Low Temperature Injury
- Frost injury
- Temperature Flux
- Desiccation – dry winter winds
- **Lack of Water to withstand injury**
- Wrap plants to protect



# Sunscald



- South face of trees
- Thin bark and young trees
- Deciduous trees
- Proper hydration in winter
- Wrapping

# Disorders: Splitting Fruit

- Once fruit reaches mature color epidermis cannot expand
- High water input will cause fruit to 'split'
- Secondary fungal or bacterial pathogens quickly infect 'split' fruit





# Abiotic Disorders: Blossom End Rot

- Affects many vegetable & fruit crops
- Caused by Calcium (Ca) deficiency at growing point in fruit
- Drought stress during fruit set prevents transportation of Calcium
- **Even Moisture and Watering = CURE**



# Iron Chlorosis



- General yellowing of young growth or branches of trees
- Watering issues
- Winter damage
- Soil pH
- Soil compaction
- Herbicide damage



# Chemical Burn



Hard to diagnose

Broad injury to plant

Witches broom, burnt tips, rubberized - distorted contorted leaves, chlorosis of leaves



# Mechanical Damage



- Weed whacker / mower damage
- Removal of bark
- Decline of tree overall
- Secondary rot, insects, diseases, chlorosis, wilt

# Branch Girdle - Staking



# Girdled Roots

- Cuts off nutrients and water to tree
- Weakened at base
- Slow decline, branch loss, leafing out
- Cause: container grown, soil compaction, urban / sidewalk constriction





