

Plant Disorders

Symptoms, Causes, Diseases, Insects

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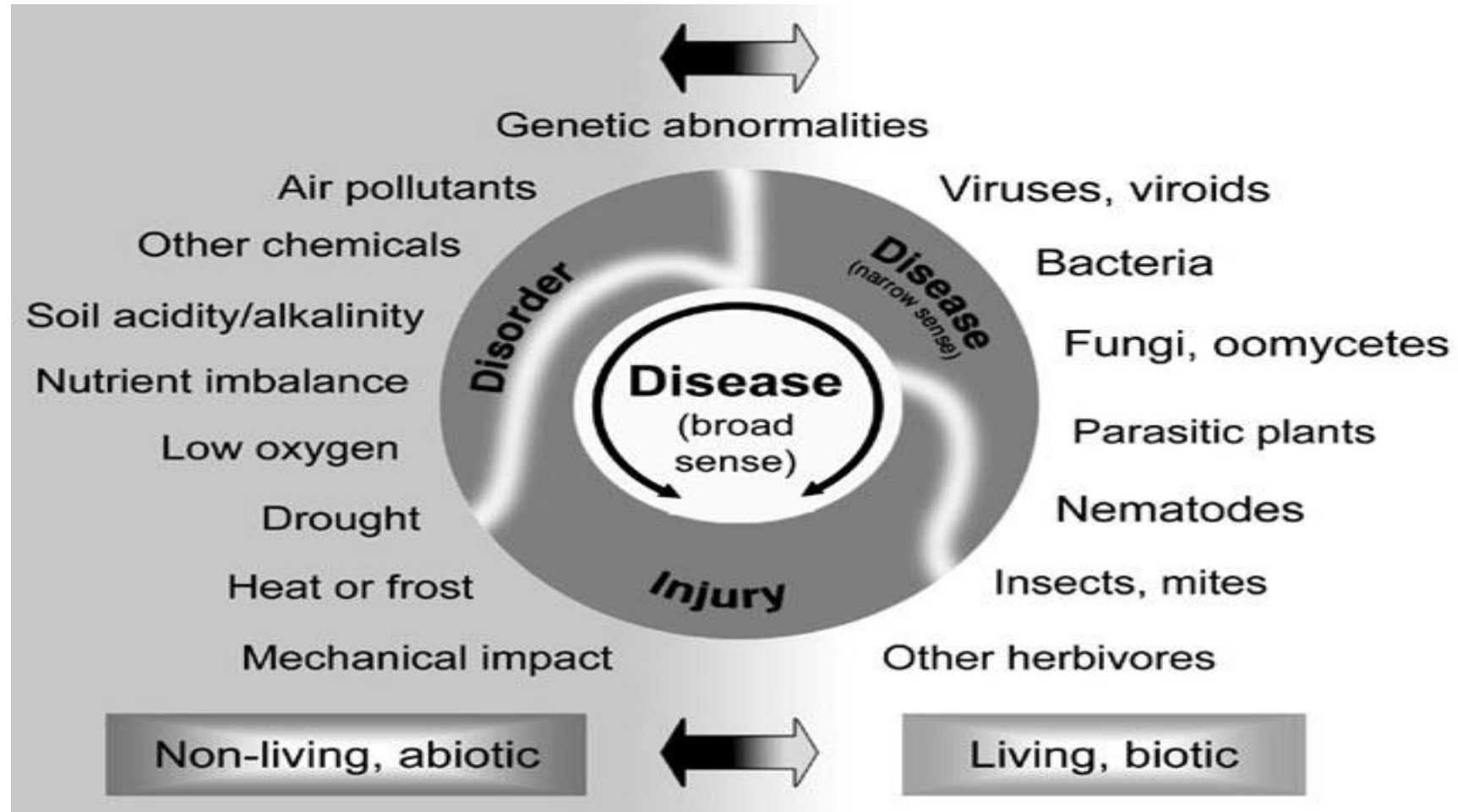
Phillip Lujan
NMSU Plant Diagnostic Lab

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?

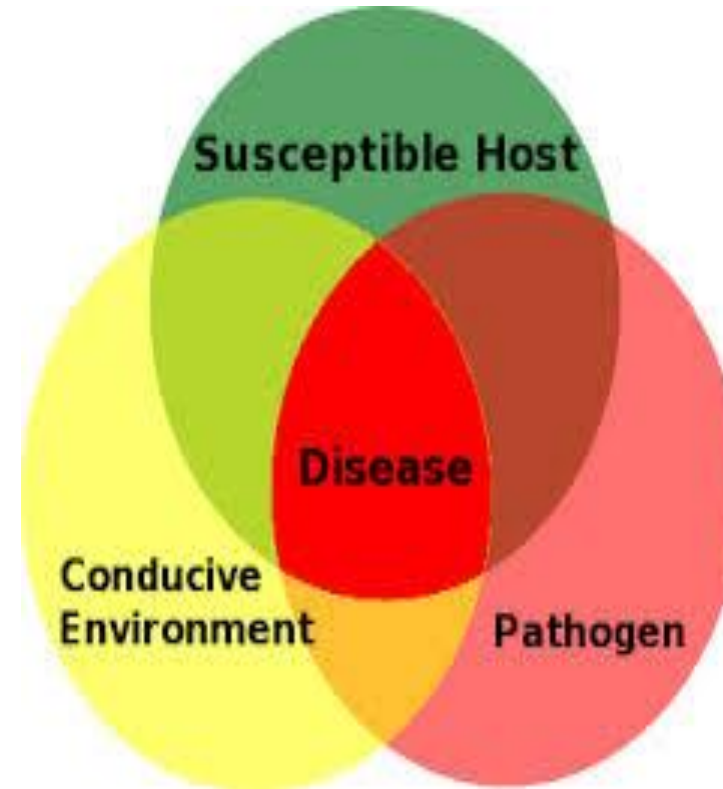


Is it a disease or disorder?



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 (O₂, 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



