Controlling Pests and Diseases

ASSESSMENT

- Define the **problem** (plant name, normal development, *symptoms* shown by plant due to pest/disease, *signs* left by pest/disease)
- Look for **patterns** (uniform spread across this plant and others like it or non-uniform spread)
- Determine **time** (gradual onset of pest/disease or sudden onset)

DIAGNOSIS

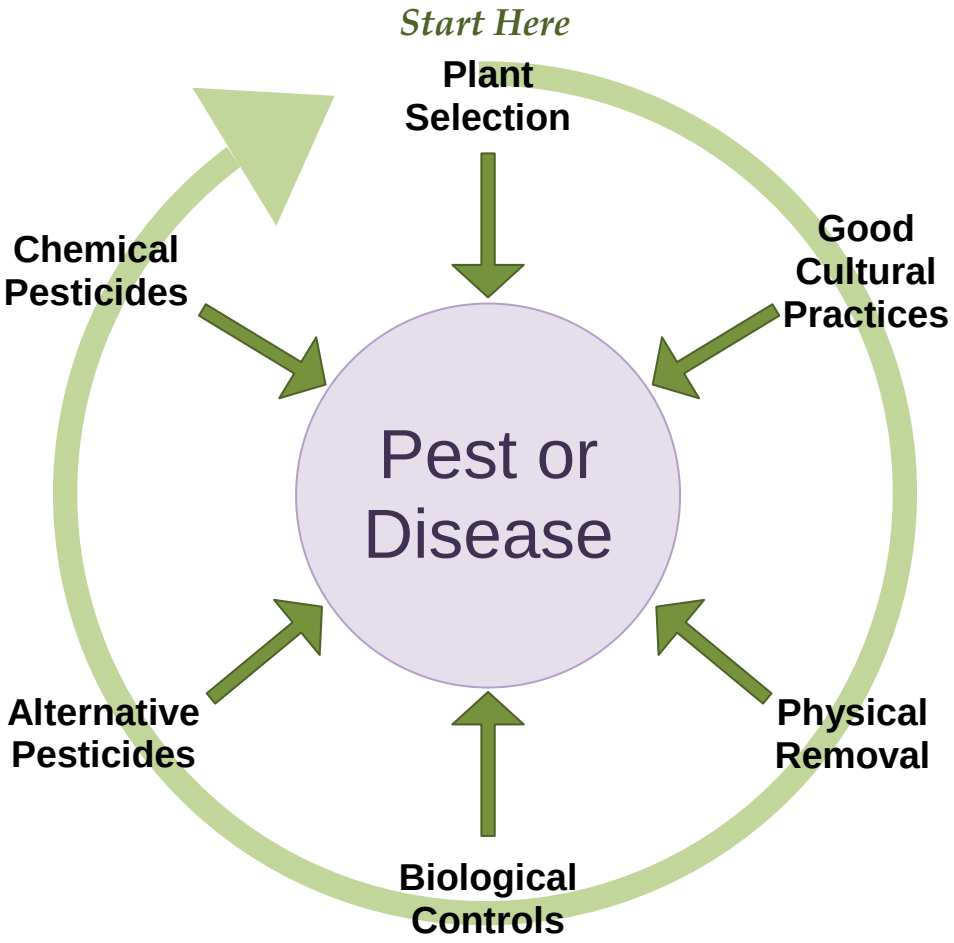
Determine the **cause:** use problem, pattern, and time data to match with that found in reference sources such as the HGIC *Fact Sheets* or the *Index of Plant Diseases of South Carolina* all of which are available at the *Clemson Extension Home and Garden Information Center* (HGIC) website (www.clemson.edu/extension/hgic/), Ortho Problem Solver, etc. You can also call the *Georgetown County Extension Office* at 546-4481 or the *Horry County Extension Office* at 365-6715 for help.

TREATMENT

Select the appropriate **treatment** based on the recommendations in the references and/or from the Extension Agent. Use an integrated, coordinated approach to treatment or disease/pest management (see below).

Integrated Pest Management

*IPM is a strategy that uses various combinations of pest control methods (biological, cultural, and chemical) in a compatible manner to achieve satisfactory control and ensure favorable economic and environmental consequences.**



HGIC Fact Sheet 2755: Integrated Pest Management*

Integrated Pest Management: A strategic approach to plant health

Healthy Plant Tactic	Example
Plant Selection (Choose the *right plant* for the *right place*, select plants that are disease or pest resistant and that will that will grow well in this area)	• Tomatoes labeled VF are resistant to Verticillum and Fusarium wilt
	• "Milky Way" and "National" are dogwoods resistant to powdery mildew
	• "Corrine" and "Merlin" azaleas are resistant to phytophthora root and crown rot
	• "Regal" cucumbers are resistant to downy and powdery mildew, anthracnose, etc.
Good Cultural Practices (The smart things you do to care for your plant. *The best defense against pests and diseases is a healthy plant*)	• Allow sufficient space between plants for air/light
	• Plant so that it can grow to its natural height/shape without interference
	• Allow soil to dry out between watering (overly moist soil rots roots and harbors fungi)
	• Avoid overhead watering to avoid wetting the leaves (this encourages fungi development and water splashing from soil onto leaves transmits bacteria)
	• Make sure the soil is tested and fertilized appropriately. Don't guess—soil test!
	• Amend the soil with organic matter (compost)
	• Mulch several inches deep but avoid contact with the trunk and "volcano mulching"
	• Clean up weeds, cuttings, and debris around plant that may provide places for bacteria and pests to grow
Physical Removal (Simply remove the pest from the plant)	• Pick off bagworm "bags" from cedar trees and discard; remove azalea leaf galls
	• Knock Japanese beetles into a soapy water solution in a bucket and discard
	• Wash off aphids and mites with a strong stream of water from a hose
	• Remove plants that have viruses since there is no cure and viruses can spread
Biological Controls (Allow natural bacteria or other beneficial insects to combat your pest)	• Ladybugs, Praying Mantis, parasitic wasps, and Green Lacewings eat aphids (chemical pesticides kill these beneficial insects)
	• Ladybugs, Lacewings, Adult Damsel bugs, Minute Pirate bugs, and predator mites eat mites (chemical pesticides kill these beneficials)
	• *Bacillus thuringensis* in *Milky Spore* infects and kills grubs and bagworms
	• Beneficial nematodes control mole crickets, cutworms, white grubs, etc.
Alternative Pesticides (Avoid killing beneficial insects and pollinating bees)	• Insecticidal Soaps like *Safer Rose & Flower Insect Killer*; *Safer Insect Killing Soap*; *Bonide Multi-purpose Insect Control Soap Concentrate* kill aphids, mites, thrips
	• Horticultural Oils like *Bonide All Seasons Spray Oil* and *Green Light Neem Concentrat*e kill scale insects, aphids, and spider mites
	• Systemic insecticides (e.g. applied as drenches to the root area) kill many pests but do not harm most beneficial insects (do **not** use with flowering plants as it may harm pollinating bees). Examples: *Bayer Advanced Garden Tree and Shrub Insect Control Concentrate; Spectracide Systemic Rose & Flowering Shrub Insect Control Fertilizer Concentrate; Green Light Tree & Shrub Insect Control with Safari*
	• For fire ants: *Amdro Fire Ant Bait; Green Light Fire Ant Control Bait*, etc.
Chemical Pesticides (Use these only as a last resort or if the damage is so severe that other tactics have failed. Avoid spraying insecticides when pollinating bees are foraging. Read, understand, and follow the directions on the product label)	• For fungi (black spot, powdery mildew, rust, etc.): *Spectracide Immunox*; *Green Light Fung-away Systemic Fungicide*; *Ortho Garden Disease Control*, etc.
	• For scale: *Bonide All Seasons Spray Oil, Green Light Neem Concentrate*, etc.
	• For aphids: *Ortho Malathion*; *Spectracide Bug Stop for Gardens; Ortho Bug-B-Gon MAX; Hi-Yield Kill-A-Bug II Concentrate*, etc.
	• For thrips: *Ortho Bug-B-Gon MAX; Bayer Advanced Rose & Flower Insect Killer, etc.*
	• For slugs and snails: *Bayer Advanced Dual Action Snail & Slug Killer Bait; Sluggo; Iron phosphate; Ortho EcoSense Brand Slug and Snail Killer*, etc.
	• For whiteflies: *Ortho Malathion; Bonide Total Control; Spectracide Garden Insect Killer*, etc.

Visit the *Grand Strand Master Gardeners' Association* website:
www.grandstrandmga.com