



Garden Pest and Disease Management

General Principles for garden pest and disease management on the Gold Coast:

Garden pest and disease management in Gold Coast, Queensland, requires a proactive and integrated approach due to the region's warm, often humid, subtropical climate. This environment can be a breeding ground for a wide range of pests and diseases. The key is to create a healthy, resilient garden that can naturally withstand many common issues.

I. Integrated Pest Management (IPM) Principles:

IPM is a holistic and sustainable approach that combines various strategies to manage pests and diseases with minimal environmental impact.

1. Prevention is Best:

- **Right Plant, Right Place:** Choose plants suited to the Gold Coast's climate and your specific garden conditions (sunlight, soil type, drainage). Healthy plants are more resistant.
- **Good Air Circulation:** Space plants appropriately to allow for airflow, reducing humidity around foliage which can encourage fungal diseases.
- **Soil Health:** Healthy, well-draining soil (with good organic matter) promotes strong root systems and robust plant growth. Test your soil and amend as needed.
- **Mulching:** A good layer of organic mulch (e.g., bark, sugarcane, lucerne) suppresses weeds (which can harbour pests/diseases), retains moisture, and moderates soil temperature.
- **Cleanliness/Sanitation:** Remove fallen leaves, dead plant material, and diseased branches promptly. Sterilise pruning tools between plants to prevent disease spread.
- **Crop Rotation (for edibles):** Don't plant the same vegetable in the same spot year after year to break pest and disease cycles.
- **Water Wisely:** Water at the base of plants in the morning to allow foliage to dry quickly, reducing fungal issues. Avoid overwatering, which can lead to root rot.

2. Monitoring and Early Detection:

- **Regular Inspections:** Walk through your garden frequently. Look closely at the top and underside of leaves, stems, and new growth for any signs of pests or disease. A magnifying glass can be helpful.
- **Know Your Pests/Diseases:** Learn to identify common issues in the Gold Coast. Resources from local nurseries, the Gold Coast City Council, or Queensland Department of Agriculture and Fisheries can help.
- **Yellow Sticky Traps:** Useful for monitoring flying insects like aphids, whiteflies, and fungus gnats.

3. Cultural Controls:

- **Hand Picking:** For larger pests like caterpillars, snails, slugs, or even scale, manually removing them can be effective for small infestations.
- **Strong Water Jet:** A blast of water from the hose can dislodge aphids, mites, and whiteflies from leaves.
- **Pruning:** Remove affected leaves or branches promptly. Prune to improve air circulation and plant vigour.
- **Companion Planting:** Some plants can repel pests (e.g., marigolds, nasturtiums, garlic) or attract beneficial insects.
- **Physical Barriers:** Netting can protect fruit from fruit fly, birds, and possums. Row covers can shield young vegetables from insect pests.

4. Biological Controls:

- **Encourage Beneficial Insects:** These are your garden allies! Attract ladybirds (eat aphids), lacewings (eat aphids, mites), predatory mites (eat pest mites), parasitic wasps (target caterpillars, aphids, scale). Plant a diverse range of flowering plants, especially those with small flowers like dill, fennel, cosmos, and alyssum.
- **Beneficial Nematodes:** Microscopic worms that attack soil-dwelling pests like grubs and some larvae.
- **Bacillus thuringiensis (Bt):** A naturally occurring bacterium that specifically targets caterpillars when ingested. It's safe for humans, pets, and most other insects.

5. Chemical Controls (Use as a Last Resort):

- **Organic/Low Toxicity Options First:**
 - **Horticultural Oil:** Smothers soft-bodied insects (aphids, mites, whiteflies, scale, mealybugs) and some fungal spores. Apply when temperatures are moderate to avoid burning foliage.
 - **Insecticidal Soap:** Similar to horticultural oil, disrupts insect cell membranes.
 - **Neem Oil:** A natural plant extract that acts as an insect repellent, growth disruptor, and anti-feedant. Effective against a broad range of pests.
 - **Baking Soda Spray (for Powdery Mildew):** Mix 1 teaspoon baking soda, 1 teaspoon horticultural oil (or dish soap), and 1 litre of water.
 - **Copper-based Fungicides:** Can be used for some fungal diseases, but use sparingly.
- **Chemical Pesticides/Fungicides:** If all else fails and the infestation/disease is severe, select a targeted product.
 - **ALWAYS READ THE LABEL:** This is paramount. Follow mixing instructions, safety precautions (wear PPE!), and application rates precisely.
 - **Spot Treat:** Target only the affected areas to minimise impact on beneficials.
 - **Timing:** Apply in the late afternoon or evening when beneficial insects are less active. Avoid spraying in wind or before rain.
 - **Check Withholding Periods:** If spraying edible plants, note how long you must wait before harvesting.

II. Common Pests on the Gold Coast:

● Sap-Sucking Pests:

- **Aphids, Whiteflies, Mealybugs, Scale, Thrips:** Cause distorted growth, yellowing leaves, and sticky "honeydew" which can lead to sooty mould. Control: Water blast, insecticidal soap, neem oil, horticultural oil, encourage ladybirds/lacewings.
- **Spider Mites:** Tiny arachnids that cause stippling (tiny dots) on leaves and fine webbing. Thrive in hot, dry conditions. Control: Increase humidity, water blast, horticultural oil, predatory mites.

- **Psyllids:** Cause dimpled, lumpy leaves (especially on lilly pilli, e.g., "psyllid leaf gall"). Control: Prune affected growth, encourage predatory wasps, some systemic insecticides (use as last resort).
- **Chewing Pests:**
 - **Caterpillars:** Chew holes in leaves. Control: Hand pick, Bt (*Bacillus thuringiensis*) spray.
 - **Snails and Slugs:** Leave slime trails and irregular holes in leaves, especially on young seedlings. Control: Hand pick at night, create barriers (crushed eggshells, copper tape), use iron phosphate baits (safer for pets).
 - **Grasshoppers:** Can cause significant defoliation. Control: Manual removal for small infestations, encourage birds.
 - **Fruit Fly:** A major pest for fruiting plants. Females lay eggs in fruit, larvae tunnel through. Control: Netting, bait traps (commercial or homemade with fruit juice/vinegar), remove fallen fruit, keep gardens tidy.
- **Root/Underground Pests:**
 - **Lawn Grubs (e.g., Scarab Beetle larvae):** Feed on grass roots. Control: Check for damage, specific lawn grub treatments, beneficial nematodes.
 - **Nematodes (Root-knot):** Microscopic worms that cause galls or knots on roots, stunting plant growth. Control: Crop rotation, resistant varieties, improve soil organic matter.

III. Common Diseases on the Gold Coast:

- **Fungal Diseases (most common in humid Queensland):**
 - **Powdery Mildew:** White, powdery coating on leaves. Thrives in humidity and poor air circulation. Control: Improve air circulation, baking soda spray, fungicides.
 - **Black Spot:** Dark spots on leaves, especially roses, leading to defoliation. Control: Good air circulation, water at base, remove affected leaves, fungicides.
 - **Rust:** Orange/brown powdery spots on leaves. Control: Improve air circulation, remove affected leaves, some fungicides.
 - **Sooty Mould:** Black, sooty coating on leaves. It grows on honeydew excreted by sap-sucking insects (aphids, whiteflies, scale). Control: Treat the underlying insect pest.
 - **Root Rot (*Phytophthora*, *Armillaria*):** Caused by various soil-borne fungi, often due to waterlogged soil. Leads to wilting, yellowing, and plant death. Control: Improve drainage, avoid overwatering, plant resistant varieties.
 - **Myrtle Rust (*Austropuccinia psidii*):** A highly destructive fungal disease affecting plants in the Myrtaceae family (e.g., lilly pillies, bottlebrushes, eucalypts). Causes yellow/orange powdery spores on new growth, leading to distortion, dieback, and sometimes death. **Cannot be eradicated.** Control: Plant resistant varieties, monitor, remove affected parts, good air circulation, some fungicides can suppress but not cure.
 - **Anthracnose:** Causes sunken spots on leaves and fruit. Common on mangoes, avocados. Control: Good hygiene, prune infected parts, improve air circulation.
- **Viral Diseases:**
 - **Mosaic Virus:** Causes mottled yellow/green patterns on leaves, distorted growth. **No cure.** Control: Remove and destroy infected plants immediately to prevent spread. Sterilise tools. Often spread by sap-sucking insects.
- **Bacterial Diseases:**
 - **Bacterial Leaf Spot/Wilt:** Various symptoms, often water-soaked spots, wilting. Control: Good sanitation, avoid working with wet plants, good air circulation.

By understanding these common pests and diseases and implementing a balanced, integrated management approach, you can maintain a thriving and healthy garden on the Gold Coast.

