GROW PITTSBURGH

Preparing for Pests & Disease

Use quality seeds and seedlings

- Brassica seeds should be tested for Black Rot.
- Some reputable seed companies that test (check individual varieties): High Mowing, Johnnys, Fedco.

Use quality materials

- Hay, straw, potting soil can all bring weed seeds to your garden.
- Buy weed free, or “sprout” your hay before you use it. Soak with water, cover with tarp for 2 - 4 weeks.
- Buy compost from a reputable company. Mushroom compost may contain herbicides.

Practice good sanitation

- Clean and sanitize tools
- Do not reuse wooden tomato stakes on tomatoes. You cannot sanitize them. Use them on flowers or beans.

End of Season Garden Clean Up

- **Small Gardens**
  - Cut Diseased crops such as tomatoes at the soil line. Remove from garden and send to municipal composter
  - Do not compost at home, this harbors disease.
- **Farms**
  - You can mow down diseased crops and till them into the soil in the Fall.
  - Soil will break down disease. Must also have a good crop rotation.

Practice Crop Rotation

- A good Crop Rotation breaks up the lifecycle of your pests.
- You can’t avoid pests and disease problems, but you can run away from them.

Avoid Crop Problems

- Grow crops Before pests populations become a problem
  - E.g. Cucumbers for June/ July harvest.
- Grow crops during their best season
  - E.g. grow radishes in spring or fall

Practice exclusion

- Keep Pests Out!
- Use mulch - on Tomatoes, Brassicas.
- Cover with Row Cover - Spring Brassicas, Cucurbits.

Support a Strong Ecosystem

- Natural Predators are Important Allies.
- Maintain wild areas and plant wildflowers and other small flowers to feed predatory insects.
- Examples: native wildflower mix, marigold, sunflower, flowering dill, wild carrot.

Spraying Crop Protection Products and Organic Pesticides

- Start the Season with a Plan
- List your known pest issues and create a management Plan
- Spray once pest issues crop up.

Preparing for Pests & Disease

Creating a Crop Rotation Plan

1. List all your crops and categorize by Family
   a. E.g. Nightshade: tomatoes, peppers, potato
2. Look up minimum Crop Rotation Interval (years)
   a. Tomatoes - 3 years without a Nightshade
   b. Brassicas - 2 years without a Brassica
   c. Cucurbits - 2 years without a Cucurbit
3. Now the Fun part. Vegetable Tetris over the Time & Space Continuum

Crop Family Table

Crop Family	Crops	Crop Interval (years without crop)	Pest Pressure on Crop Family
Allium	Onions, Garlic, Leeks	2	Medium
Aster	Lettuce, Radicchio	1	Low
Brassica	Broccoli, Kale, Collard, Cabbage, Cauliflower, Turnip, Radish, Mustards	2	High
Carrot	Carrots, Parsnips, Parsley, Celery	2	Medium
Chenopod	Beets, Spinach	2	Medium
Cucurbit	Zucchini, Cucumbers, Melon, Winter Squash	2	Medium
Legume	Beans, pease	1	Low
Mallow	Okra	1	Low
Morning Glory	Sweet Potato	1	Low
Nightshade	Tomatoes, Peppers, Potato	3	High

Example Crop Rotation

Year of Rotation	Crop Family	Crops
Year 1	Nightshade	Tomatoes & Peppers
Year 2	Aster	Salad and Lettuce
Year 3	Cucurbit & Chenopod	Zucchini, Cucumbers & Beets
Year 4	Brassica	Brassicas
Year 5	Nightshade	Tomatoes & Peppers

Crop Rotation Example.
We have 4 garden zones. We grow a different crop families (or groups of families).
⇨ In the 4th year we repeat the cycle.

Preparing for Pests & Disease

Creating a Crop Management Plan

1. Make a List of Your Common Pest issues you deal with every year. And the crop they impact.
    a. Need help with Identification? Use books, internet and take Pest ID classes and go on Pest ID walks.
    b. Upcoming Pest ID walks at Grow Pittsburgh this Summer! Stay tuned
    c. Reach out to Master Gardeners, Farmer Nick
    d. Identification is essential to making sure what you spray will work.
    e. Ask, is it:
        i. Insect, Bacteria, Fungi, Animal, or Something else
2. Consider Recording pest issues in a log that tracks things over the course of a season
3. Determine Course of Action
    a. Will a preventative action reduce or eliminate the problem?
    b. Take some preventative measures
4. Use a spray program

Pest Log

Observation	Pest	Pest Category	Crop	First Spotted	Potential Remedy
adult harlequin on leaf	Harlequin Bug	Insect	Fall Brassicas	June	
chomped on leaves	Ground Hog	Animal	Pease	April	
leaf spots	Leaf Spots	Fungi / Bacteria	Tomato	July	
green worms and frass on leaves	Cabbage worms	Insect	Spring Brassicas	April	