A42 Diagnosing plant problems

The correct identification of plant problems is essential. Without knowing what's wrong, you can't assess if treatment is needed and worth the effort or cost. It's also more likely to lead to treating the symptoms, not the underlying cause. This activity guides you through the basic steps and a worked example, with references for further research.

Resources

Unhealthy plants, clipboard and pen, reference books

Activity (see example on the next page)

1. **Suspicion**: Encourage everyone to inspect plants often for problems.
2. **Diagnosis**: when you suspect an unhealthy plant, follow a-d.
   - a. Write down symptoms, eg change to leaf, roots.
   - b. Is the problem a pest, disease, disorder or deficiency? See S4.6 for definitions and examples.
   - c. Look up symptoms and suspected problem in a reference book.
   - d. Decide on diagnosis.
3. **Treatment**: if necessary, ie if it is causing extensive damage and reducing crop quality.
4. **Prevent**: think of ways of preventing the problem happening again.

Top tip

Getting help

There are hundreds of potential problems, and symptoms are not always clear or conclusive. Many are linked, while others may be masked by secondary and often 'showier' infections. Get help from the following.

- Local allotment societies
- Local gardening clubs
- Knowledgeable parents
- Gardening advice services
- Reference books. See below.
- Garden centres

Health & Safety	Follow usual garden hygiene, eg wash hands, cover open wounds, wear gloves, etc. Ensure adult supervision, especially if using any specific control measures involving products. *See also Health and Safety Guidelines (Section SG1.2)*
Further information	B5.10 Controlling pests and diseases S4.6 Managing plant problems 'Garden Organic Guidelines' (see DVD) 'Pests - How to Control them on Fruit and Vegetables' by Pauline Pears and Bob Sherman. ISBN 1844481565 'Pests and Diseases', Royal Horticultural Society, by Pippa Greenwood and Andrew Halstead. ISBN 1405319690 'Pests, Diseases and Disorders of Garden Plants', Collins Photo Guides by Stefan Buczacki and Keith Harris. ISBN 0007196822

Example for diagnosing a plant problem

Carrot root fly

1 Suspicion

Unhealthy carrot plant, eg slower than expected growth

2 Diagnosis

Stunted growth; young plants dying; bronzing foliage.
Rusty brown tunnels visible on outside of root when carrots dug up - pest.
Investigate further - may find maggots, creamy coloured up to 9mm long.
Brown lines becoming rotten, especially in storage – secondary disease.
Diagnosis - larva of carrot root fly eating roots after adult fly lays eggs in soil next to plants.

3 Treatment

Salvage what you can. Destroy worst infected roots in active compost heap or council green waste collection. Do not store infected roots.

4 Prevent

Choose windy site: the carrot root fly is not a strong flier so carrots are less likely to be attacked on a windswept site.
Grow resistant varieties: Fly Away F1 and Resistafly F1 (resistance doesn't mean immunity).
Avoid thinning seedlings: flies are attracted by smell of crushed leaves, so limit thinning by sowing at required spacing; remove seedlings that have to be pulled out.
Intercropping/companion planting: onions in full growth may mask smell of carrots, eg four rows of onions to one of carrots.
Schedule sowing: avoid the main egg laying period of fly, eg April/May for first generation; July/August for second.
Erect a fence-like barrier around rows of carrots: at least 70cm high and not more than 1m wide, pictured.
Pull up earth around carrots: form a ridge 5cm high.
Lift maincrop carrots by September/October, do not leave over winter when infection can get worse.

Thinning can attract flies, avoid if possible