

# Pest and disease management

## FACTSHEET

### Introduction

Growing healthy plants that are high in quality helps to achieve good sales, whereas unhealthy plants can be costly to growers. When plants are attacked by pests and pathogens it results in damage and can lead to the loss of plants. Pests include insects, mites and nematodes, as well as pathogens such as fungi, bacteria and viruses.

Nurseries need to practice high standards of hygiene to prevent pests and diseases from establishing themselves. However, pests or pathogens will often be found on plants that require additional measures to maintain the quality of the plants in the nursery. This may be done through:

- Biological means by using natural enemies or bio-protectants.
- Conventional chemicals.
- Effective combination of both through Integrated Pest and Disease Management (IPDM).

Preventing the spread of pests and diseases outside the nursery to customer plants, other grower businesses and natural habitats and regions is vital. To support this, growers should understand the principles of biosecurity. Biosecurity practices include plant health standards and government legislation. To prevent spread between countries there are national import and export regulations which require phytosanitary certificates to be issued. Even for business-to-business sales within Great Britain, UK Plant Passports are required.

Use this guide to find out:

- How to recognise and identify the symptoms of plant pests and diseases.
- IPDM and in-depth information on pest and disease control in specialist crops.
- The principles of biosecurity and guidance on the legislation for importing and exporting plants and plant products.

### Contents

1. Introduction to plant health
2. Integrated Pest and Disease Management (IPDM)
3. Biosecurity and import/export
4. Weeds control and soil health
5. Specialist crops

#### 1. An introduction to plant health

A knowledge of plant health is essential to growers in producing saleable, high-quality plants and for stopping the spread of pests and pathogens.

Below are resources that introduce plant health, these resources are suitable for new entrants



Ariennir gan  
**Lywodraeth Cymru**  
Funded by  
**Welsh Government**



**FARMING**  
connect  
cyswllt  
**FFERMIO**



to the horticulture industry and for commercial growers wishing to extend their knowledge.

- Where to find information on plant pests and diseases
- Getting to grips with the basics of plant health
- Factsheet: Salad crop diseases
- [eLearning module: Recognising pests, diseases and weeds in horticulture](#)
- [e-Learning module: Horticulture principles of plant pests and diseases](#)

## 2. Integrated pest and disease management (IPDM)

IPDM is a method of mixing cultural controls, biological controls (biocontrols) and conventional chemicals to achieve the optimum control of pests and diseases in crops. The controls may be used preventatively or curatively. Biocontrols are more environmentally sustainable and have fewer crop residues. Their use is increasing as effective chemicals become less available.

For the effective use of biocontrols, the crop must be carefully and regularly monitored for signs of pests or diseases. Biocontrols are predominantly comprised of predators or parasitoids of the pest species and bioprotectants, which may be sprays such as bacterial sprays.

IPDM is not an organic farming system as if biocontrols are insufficient, conventional chemicals may be used. However, chemical use is reduced in an IPDM system.

As many of the biocontrols are living organisms, conditions must be right for them to thrive and act. For example, there must continue to be a low level of pests on which they can feed, and the temperature and humidity must be suitable.

It is important that the IPDM system, where different control types are used, is planned at the beginning of the crop season.

The following resources are recommended:

- Promoting beneficial insects
- Spray programme for disease prevention and control: protected outdoor and ornamentals
- Ornamental Plant Protection
- Soft Fruit Case Study – April 2020 (Background Raspberry + Cane fruit, Establishing crops, pests and disease)
- Soft Fruit Case study - June & July 2020 (Picking and selling, End of season PYO activities, Pest control)
- Soft fruit pests
- Biocontrols for soft fruit
- Disease Management in Bush Fruit
- Factsheet: Plant health site specific
- risk assessment
- [eLearning module: Pesticide Health and Safety](#)
- [e-Learning Module- An introduction to the principles of IPM in horticulture](#)



Ariennir gan  
**Lywodraeth Cymru**  
Funded by  
**Welsh Government**



**FARMING**  
connect  
cyswilt  
**FFERMIO**



**GARDDWRIAETH**  
**HORTICULTURE**

### 3. Biosecurity, imports and exports

Biosecurity procedures are used to stop new pests and diseases from entering the country and to control the spread of pests and diseases on crops and in natural habitats. These measures help protect crop values, as well as natural habitats and landscapes.

Measures are used to inspect plants and plant products that are being imported and exported, to report problems when they arise, and to make sure pest and disease levels are low through good nursery and stock hygiene and control measures. Plant Passports and Phytosanitary Certificates are used to ensure plants are traceable and come from disease-free locations.

There are increasing levels of commercial movement of plants and so the importance of good biosecurity has never been greater. Commercial growers have a crucial role to play in preventing problems and this begins by being familiar with the concepts of biosecurity, Government import/export regulations and how Plant Passports should be used.

For more information, see the following resources:

- High risk plant imports (*Xylella fastidiosa*)
- Factsheet: Plant passports

### 4. Weed control and soil health

The production of a healthy crop depends not only on controlling pests and diseases but also on providing good nutrition through healthy soil and reducing competition from weeds. Resources in this section give an overview of soil health as well as recommendations for the cultural and herbicidal control of weeds.

- eLearning modules:
  - [Soil Sampling](#)
  - [Soil health](#)
  - [Building and maintaining soil fertility](#)
  - [Onsite composting in horticulture](#)
- The 2020 Pumpkin Season – PYO case study
- Weed control in ornamentals
- Factsheet: Weed control in field vegetables

### 5. Specialist crops

Below are a selection of resources relating to some specialist crops grown in Wales.

#### PUMPKINS

- The 2020 Pumpkin Season – PYO case study
- Managing Blossom End Rot in Pumpkin
- Veg Growing – Spring Planning

#### ASPARAGUS



Ariennir gan  
**Lywodraeth Cymru**  
Funded by  
**Welsh Government**



**FARMING**  
connect  
cyswilt  
**FFERMIO**



- Asparagus Spring Weed and Pest Control
- See also: Soft Fruit resources in the IPDM section

### **CHRISTMAS TREES**

- Christmas Tree Needle Diseases
- Christmas tree pests and diseases

### **FLOWERS**

- Growing Sunflowers
- Growing Lavender

See also: Ornamentals resources in the IPDM section

Authors and research: David Skydmore & Iain Cox



Ariennir gan  
**Lywodraeth Cymru**  
Funded by  
**Welsh Government**



**FARMING**  
connect  
cyswllt  
**FFERMIO**

