An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine

Authorised Professional Operator Assessment

Module 3 – Quarantine and priority pests

Horticulture & Plant Health

Quarantine Pests

What is a Union Quarantine Pest?

- A pest absent from the EU, or present, but under control.
- Organism causes serious damage to plants and plant products
- Its establishment in the EU would have unacceptable economic, environmental and social impacts
- The following information concerns quarantine pests most relevant to Ireland. Full list available at https://www.eppo.int/ACTIVITIES/plant_quarantine/A2_list

Tomato Brown Rugose Fruit Virus (ToBRFV)

What is it?

- An extremely resistant virus that affects up to 100% of tomato, pepper and chili plants
- ToBRFV can survive for long periods in infected debris, in soil or on contaminated surfaces
- Can be transmitted by seeds, human handling, tomatoes and potentially bumblebees
- It has been discovered in EU Member States

Tomato Brown Rugose Fruit Virus (ToBRFV)

Symptoms:

There is a wide range, which may be mild. They often appear in the top young shoots of plant.

- **Leaves:**
  - Wrinkle and/or bubble
  - Chlorotic and mosaic patterns
  - Necrotic spots
- **Fruit:**
  - Yellow or brown spots
  - Deformities
- Currently no commercial tomato varieties are tolerant to ToBRFV

Tomato Brown Rugose Fruit Virus (ToBRFV)

Best Practice:

- Use disposable gloves and disinfect hands
- Dedicated clothing and work equipment for sensitive plants
- Sterilisation of equipment
- Train staff in disease recognition
- Ensure phytosanitary certificates or plant passports guarantee virus free status

Globodera pallida

What is it?

- Commonly known as the Potato Cyst Nematode (PCN) or eelworm
- These microscopic parasite thrive in temperate regions and are found in soil particles or host roots, stolons or tubers
- The PCN species *G. pallida* is more difficult to manage than PCN species *G. rostochiensis* as there is currently less resistance to *G. pallida* in most plant cultivars
- *G. pallida* PCN eggs can remain dormant within the soil for up to 25 years
- The main host of PCN are restricted to the *Solanaceae* family; potatoes, tomatoes and aubergines, but in Ireland the host plant of concern is field potatoes

Globodera pallida

Symptoms:

- There are not specific symptoms of infection. Crops can display variety of symptoms:
  - Crops display patches of poor growth
  - Plants may display chlorosis and wilting, with poor top growth
  - Yield loss

  Smaller tubers

To be confident:

- Cysts must be observed directly on host roots;

or

- Soil sampling

Globodera pallida

How does PCN spread?

- Dispersed with the movement of seed potato and/or soil
- Through contaminated machinery, farming implements and footwear
- Wind during dust storms
- Animal movement and/or pass through the gut of animals without damage

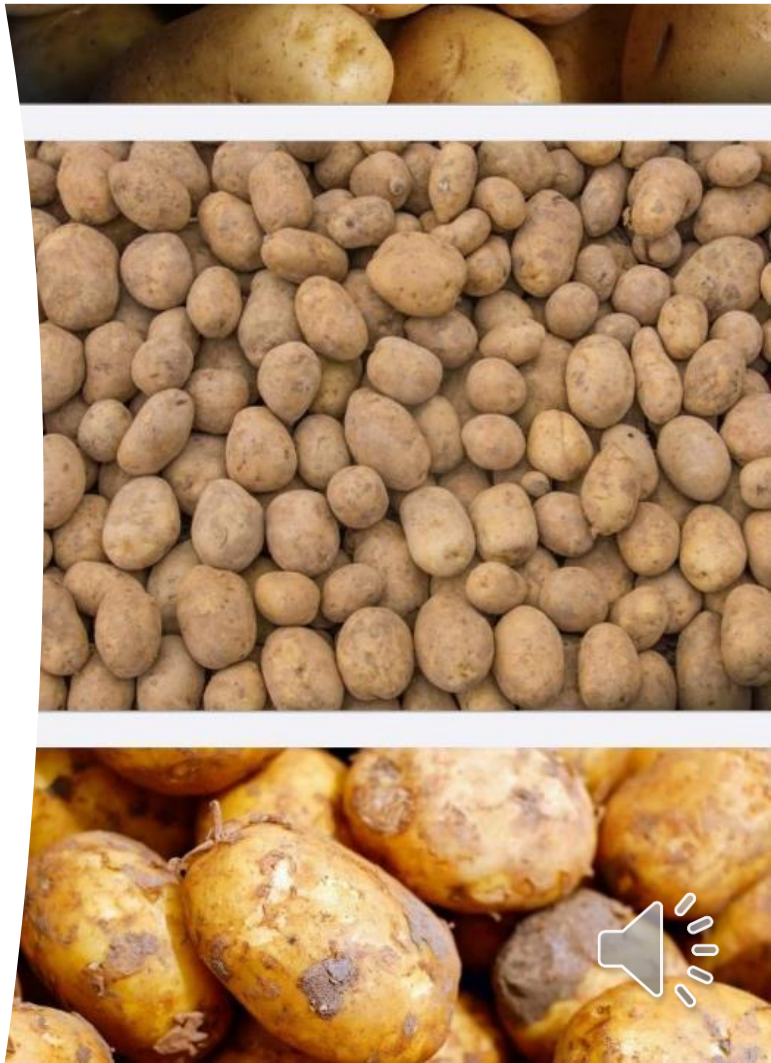
Detection:

- In Ireland and other EU states, it is required that soil sampling be done on land intending to grow certified seed potatoes or other bulbous plants

Globodera pallida

Best Practice:

- Sanitise farm machinery/tools/footwear
- Plant certified seed material
- Practice long crop rotations (5+ years)
- Use resistant varieties
- Use of biofumigants
- Collect waste water, to minimise spread of PCN to clean land
- Minimise soil movement; i.e. ensure commercial vehicles are soil free



Priority Pests

Priority Pests of Concern to Ireland	
Pest	Common name
Agrilus planipennis	Emerald Ash Borer
Anoplophora chinensis	Citrus Longhorn Beetle
Anoplophora glabripennis	Asian Longhorn Beetle
Aromia bungii	Red-necked Longhorn Beetle
Bursaphelenchus xylophilus	Pine Wood Nematode
Popillia japonica	Japanese beetle
Spodoptera frugiperda	Fall armyworm
Xylella fastidiosa	Leaf Scorch Disease

Priority Pests:

- Quarantine pests that are identified as top priorities for EU Member States
- 20 pests on the European Commission's list
- Extra requirements for these pests:
  - ✓Annual surveys
  - ✓Contingency plan
  - ✓Simulation exercises
  - ✓Action plan
  - ✓More information to the public

The following priority pests are of concern to the Irish amenity sector.

Xylella fastidiosa

What is *Xylella fastidiosa*?

- A pathogenic bacterium that infects xylem tissue of plants
- There three known sub-species
- Expansive range of hosts but main hosts include:
  - Grapevines
  - Olive
  - Almond
  - *Citrus*
  - *Oleander*
  - Coffee
  - *Quercus*

Xylella fastidiosa

Transmission:

- Spread from plant to plant from xylem sap sucking insects belonging to *Hemiptera* order
- Does not survive in seed

Symptoms:

- Symptoms vary between host plant species
- Main indicators :
  - Leaf scorching (browning)
  - Wilting foliage
  - Dieback from leaves
  - Death of plant

Xylella fastidiosa

Best practice:

- Use reputable suppliers
- Seek guarantees from your supplier in relation to the health status of the plants
- Know where the plants originated from
- Make sure plant material have valid plant passports

Aromia bungii

Background:

- Commonly referred to as ‘Red-necked Longicorn’ or ‘Peach Borer’
- Larvae develop in the wood of *Prunus*, causing economic damage to apricot, cherry, peach, plum and ornamental species
- First detection was in the UK in 2008 with further outbreaks in Germany and Italy
- Introduction often occurs through wood packaging material and nursery plants

Aromia bungii

How do I recognise it?

- Adults:
  - Elongate and shiny blue-black except for the pronotum, which is distinctively bright red
  - Stout, spine-like lateral tubercles
  - 22-38mm in length
- Adults emerge from June to August
- Larvae penetrate under the bark of trees or woody shrubs
- Life cycle from egg to adult ranges from two to four years

Aromia bungii

Detection:

- Piles of extruded larval frass at base of infested tree
- Oval emergence holes (~12mm)
- Destructive sampling:
  - Removing bark of tree will determine young larvae
  - Cutting through trunk will reveal mature larvae
- Traps can be used to detect adults in summer

Aromia bungii

Best Practice:

- Ensure that all wood packaging have the mark ‘ISPM 15’
- Use of traps to monitor/detect *Aromia bungii*
- Use reputable suppliers
- Seek guarantees from your supplier in relation to the health status of the plants
- Know where the plants originated from
- If you suspect *Aromia bungii*, it is mandatory to contact Department of Agriculture, Food and the Marine

Popillia japonica

- Known as the ‘Japanese Beetle’
- Hosts include an extensive list ranging from native Irish trees (oak), naturalised trees (maple, beech) to soft fruit crops (*Rubus*, *Fragaria*, etc.) to vegetable/nursery stock
- Most common symptom is skeletonised foliage
- Adults can be found from mid-May to mid-July
- Eradication is difficult and in wider environment impossible
- Usually transmitted through infected plants and plant material, soil or transport vehicles

Popillia japonica

Best Practice:

- Use of resistant, or less susceptible species and cultivars
- Use of traps to monitor/detect *Popillia japonica*
- Use reputable suppliers
- Seek guarantees from supplier in relation to health status of plants
- Know origin of plants, plant material and/or soil
- If you suspect *Popillia japonica*, contact Department of Agriculture, Food and the Marine

Anoplophora chinensis

- Also known as the ‘Citrus Longhorn Beetle’
- A polyphagous pest that attacks plants from more than 20 genera of trees: *Acer*, *Betula*, *Malus*, *Salix*, etc.
- Symptoms are conspicuous with significant frass and holes at base of tree
- Trees infested by beetles are killed slowly over a number of years as population builds up
- Introduction usually occurs through plants, wood, wood packaging material and ‘hitchhiking’ on vehicles
- Detection of this pest would result in the establishment of buffer zones, surveys, ban on movement of host plants and eradication of all nearby host plants

Anoplophora chinensis

Best Practice:

- Use reputable suppliers
- Seek guarantees from your supplier in relation to the health status of the plants
- Know where plants/trees are sourced and grown
- Ensure that all wood packaging has the mark ‘ISPM 15’
- Make sure plant material have valid plant passports
- Contact the Department of Agriculture, Food and the Marine if you suspect the presence of *Anoplophora chinensis*

Quarantine Pests

If you detect or suspect the presence of a quarantine pest on your premises, it is mandatory to report this to the Department of Agriculture, Food and the Marine.

Failure to do this could result in the suspension or withdrawal of your authorisation.

International Year of Plant Health

- United Nations General Assembly has declared 2020 International Year of Plant Health (IYPH)
  - To address the issue that threatens plant health:
    - Climate change
    - Human activity
    - International travel and trade
  - All impact on biodiversity, create new niches for pests and increase spread of pests and diseases
- Opportunity to raise global awareness on how plant health can end hunger, reduce poverty, protect the environment and boost economic development

International Year of Plant Health

Key Facts:

- The annual value of trade in agricultural products has almost trebled in last decade, reaching US$1.7 trillion
- Agricultural production must rise about 60% by 2050 to feed a larger population
- Plant pests are responsible for losses of up to 40% of food crops globally
- Climate change threatens crop yields with more pests appearing earlier and spreading into new territories
- Beneficial insects are vital for plant health: pollination, pest control soil health, nutrient recycling - yet insect abundance has fallen by 80% in the last 25-30 years

International Year of Plant Health

How to support Plant Health:

- Prevent spread of pests by using only certified pest-free seeds and seedlings
- Regularly monitor and report occurrence of pests on farms
- Adopt environmentally friendly pest-management practices – including those based on biological approaches that do not kill pollinators, and beneficial insects and organisms
- Employ modern digital technology, mobile apps and software to access information on prevention and management of plant pests and diseases
- Make trading and transporting plants and plant products safer by complying with international plant health standards and legislation

For Further Information

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