



Department
for Environment
Food & Rural Affairs

Biosecurity update: *Xylella fastidiosa* and other threats

Nicola Spence

Chief Plant Health Officer

Protect and maximise the value of plants to society and enhance productivity and growth in horticulture, forestry and crop sectors

- Minimise the impacts of 'regulated' pests and diseases
- Enable businesses to grow by trading in healthy plant material
- Foster a resilient natural environment
- Enhance societal well-being

Expert Taskforce Report 2013



Plant Biosecurity Strategy 2014



Tree Health Management Plan 2014



Predict:UK Plant Health Risk Register

The screenshot shows the UK Plant Health Risk Register website. At the top, there is a browser address bar with the URL <https://secure.defra.gov.uk/plhr/riskRegister>. Below the browser bar is an orange header with the text "UK Plant Health Risk Register" and a home icon. Underneath the header is the Department for Environment, Food & Rural Affairs logo and name. The main content area features a search bar with the text "Search for a Pest or Organism" and a "794 pests in the Risk Register" badge. The search bar has a "Search" button. Below the search bar are four filter buttons: "Preferred Name", "Synonym", "Common Name", and "Host", each with a checked checkbox. There are also two buttons: "Advanced Search" and "Download Entire Risk Register". The bottom section of the page is divided into four columns: "About", "Risk Register News", "Example Searches", and "About Plant Health".

UK Plant Health Risk Register

Department for Environment, Food & Rural Affairs

Search for a Pest or Organism 794 pests in the Risk Register

Search

Preferred Name Synonym Common Name Host

Advanced Search Download Entire Risk Register

About

The UK Plant Health Risk Register is a major step in implementing the recommendations of the independent Task Force on Tree Health and Plant Biosecurity. It is a tool for government, industry and stakeholders to prioritise action against pests and diseases which threaten our crops, trees, gardens and countryside. The Register is publicly available.

Risk Register News

Additions to the Risk Register
31/07/2015

The following pests have been added to the Risk Register recently:...

[View More](#)

Pest Interceptions 21/07/2015

The following pests have all been recently intercepted or detected in the UK. They are considered to...

Example Searches

Show pests marked as a priority for...

Which entries are pests of *Fraxinus*?

Which entries are pests of *Solanum*?

About Plant Health

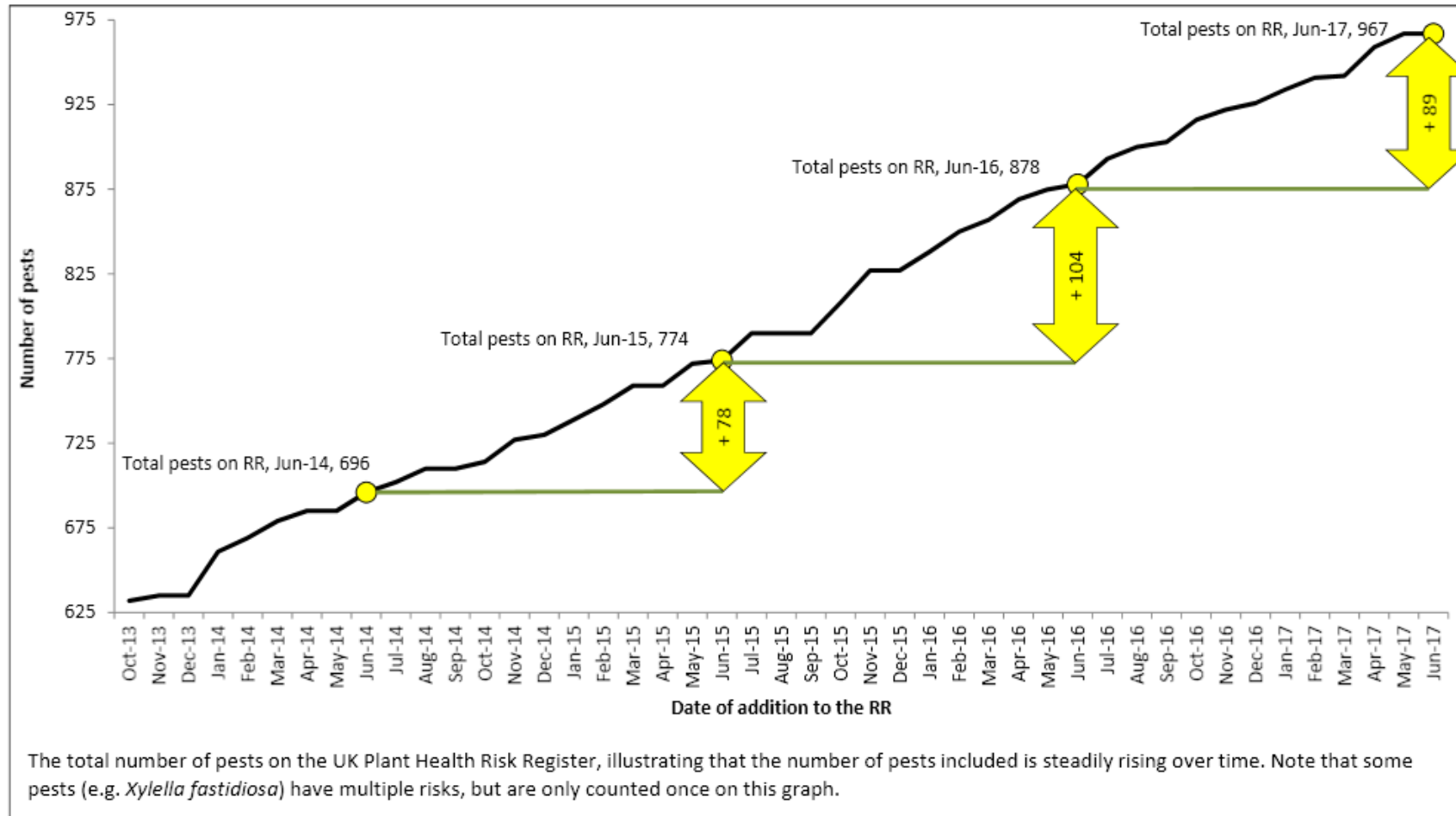
What's New

Latest Pest Risk Assessments

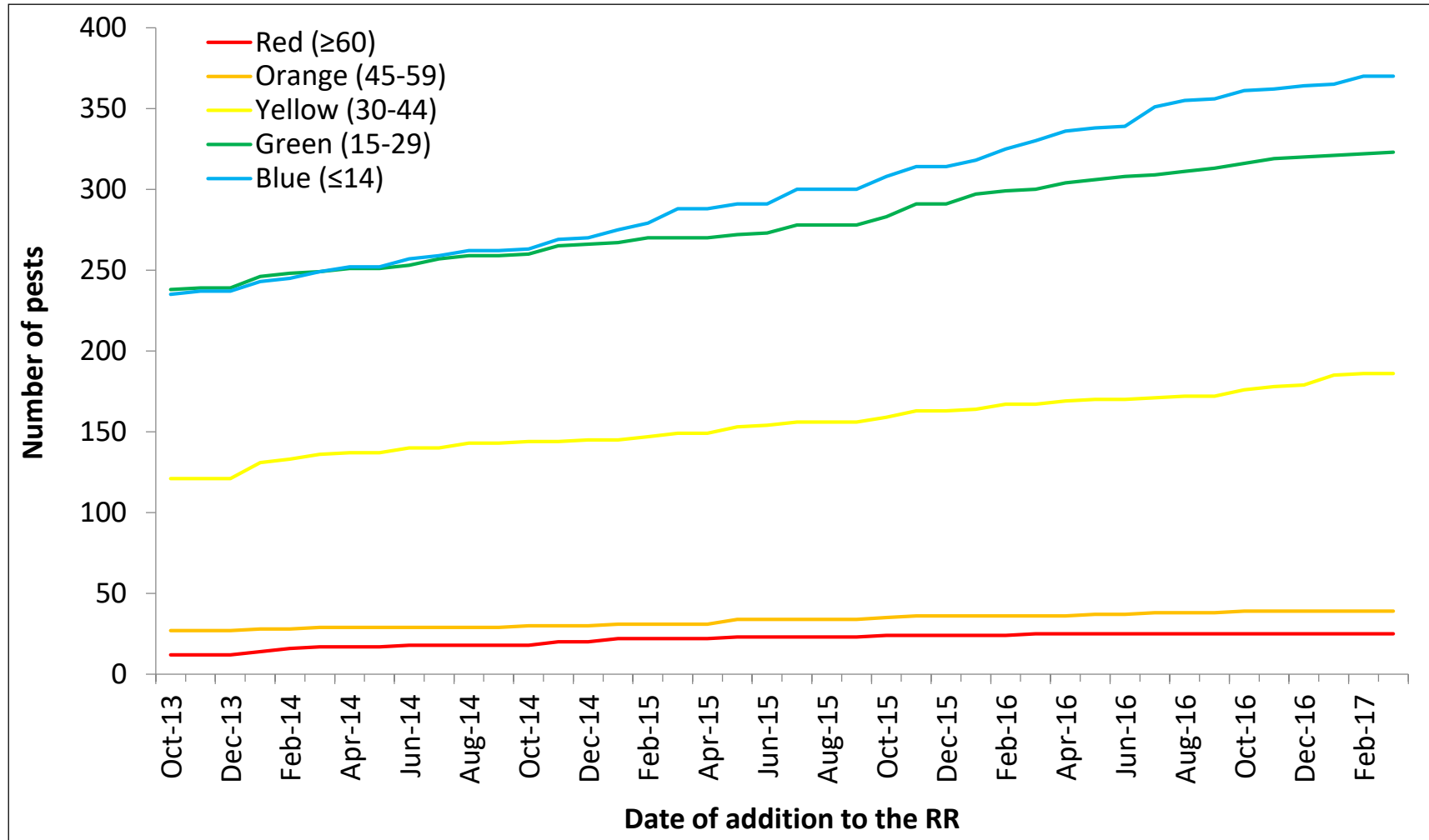
Legislation

Licensing of non-native biocontrol

Steady increase in numbers added to the RR



But mainly lower risk issues being added



Three of the Most Unwanted



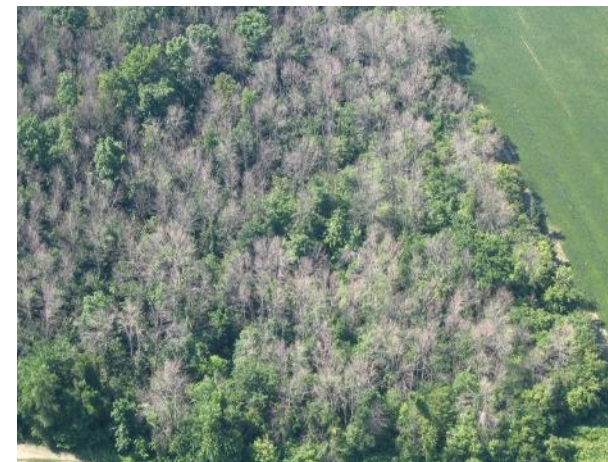
Asian longhorn beetle: *Anoplophora glabripennis*

Key risks	
What is the threat?	The beetle enters the UK and damages a wide range of native trees.
How would it get here?	Larvae moved from Asia in poorly treated wood packaging material.
How would it affect UK trees?	Larvae tunnel inside wood, causing structural weakness and providing entry points for diseases.
Other impacts	Eradication could lead to the removal of valuable ornamental trees.
How quickly does it spread?	A few hundred metres a year would be typical for a well established outbreak.
How controllable is it?	Larvae feed inside trees and control options are limited, usually involving the removal and chipping of the infested trees.
Current and proposed actions	Tree felling in Kent has eradicated the one UK outbreak



Emerald Ash Borer: *Agrilus planipennis*

Key risks	
What is the threat?	A serious insect pest of ash originates from Asia and invasive in Russia and North America.
How would it get here?	Most likely via imported wood, in particular firewood, originating from Russia or its neighbouring countries.
How would it affect UK trees?	Primarily a pest of ash but other hosts reported. Once dieback and decline is observed trees usually die within 2-3 years.
Other impacts	Many species rely on ash. Wide scale death of trees will have impacts on biodiversity.
How quickly does it spread?	In Russia it has been spreading west from Moscow at approximately 20-30 km/year.
How controllable is it?	Infestations do not become apparent for several years, making eradication difficult. Extensive precautionary felling of host trees required to achieve eradication together with movement controls on wood.
Current and proposed actions	Protected Zone status and pre-notification of firewood imports to target high risk consignments for inspection. Research on resistant trees.



Xylella fastidiosa

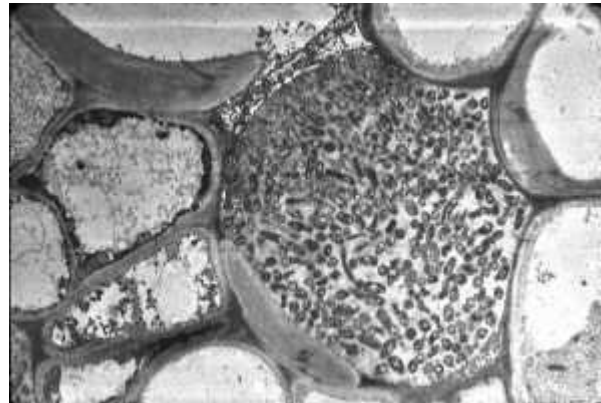
Key risks	
What is the threat?	<i>Xylella fastidiosa</i> is a highly damaging bacterial pathogen native to the Americas and introduced to Europe
How would it get here?	Most likely to arrive on planting material.
How does it affect UK plants?	Vast host range including lucerne, vines, lavender and trees like ash, elm and plane. Bacteria block the xylem (water carrying) vessels leading to dieback, leaf scorch and in some cases mortality.
Other impacts	Massive economic and social impacts due to the removal of ancient olive trees in Italy and the impacts on trade
How quickly does it spread?	It is spread by xylem feeding insects like the meadow spittlebug, and can move in trade of asymptomatic plants.
How controllable is it?	The only control option is destruction of infected plants. Vector populations can be controlled by spraying.
Current and proposed actions	Under EU legislation, all hosts within 100 metres would be destroyed and movement of host plants controlled for 5 km. All hosts must move with a plant passport.



Biology

What is *Xylella*?

- A plant pathogenic bacterium which colonises the xylem
- As the bacteria multiplies the vessels become blocked, and water can not be transported from the roots to other parts of the plant
- Infected plants essentially begin to suffer from drought



<https://nature.berkeley.edu/xylella/overview/diseaseOverview.html>

Biology

Pathogen - subspecies

- *Xylella* is a very diverse pathogen with many subspecies and strains
- Three official subspecies: *pauca*, *fastidiosa*, and *multiplex*
- The subspecies vary in their host range, pathogenicity and cold tolerance
- Impacts on grapevine, citrus and urban tree species in USA and California
- First detected in Europe through impacts on olive trees in Italy

- Subspecies *multiplex* is a more cold tolerant strain
 - First found in Europe on Corsica in 2015
 - Currently causing the outbreaks in mainland France, the Balearic Islands and mainland Spain

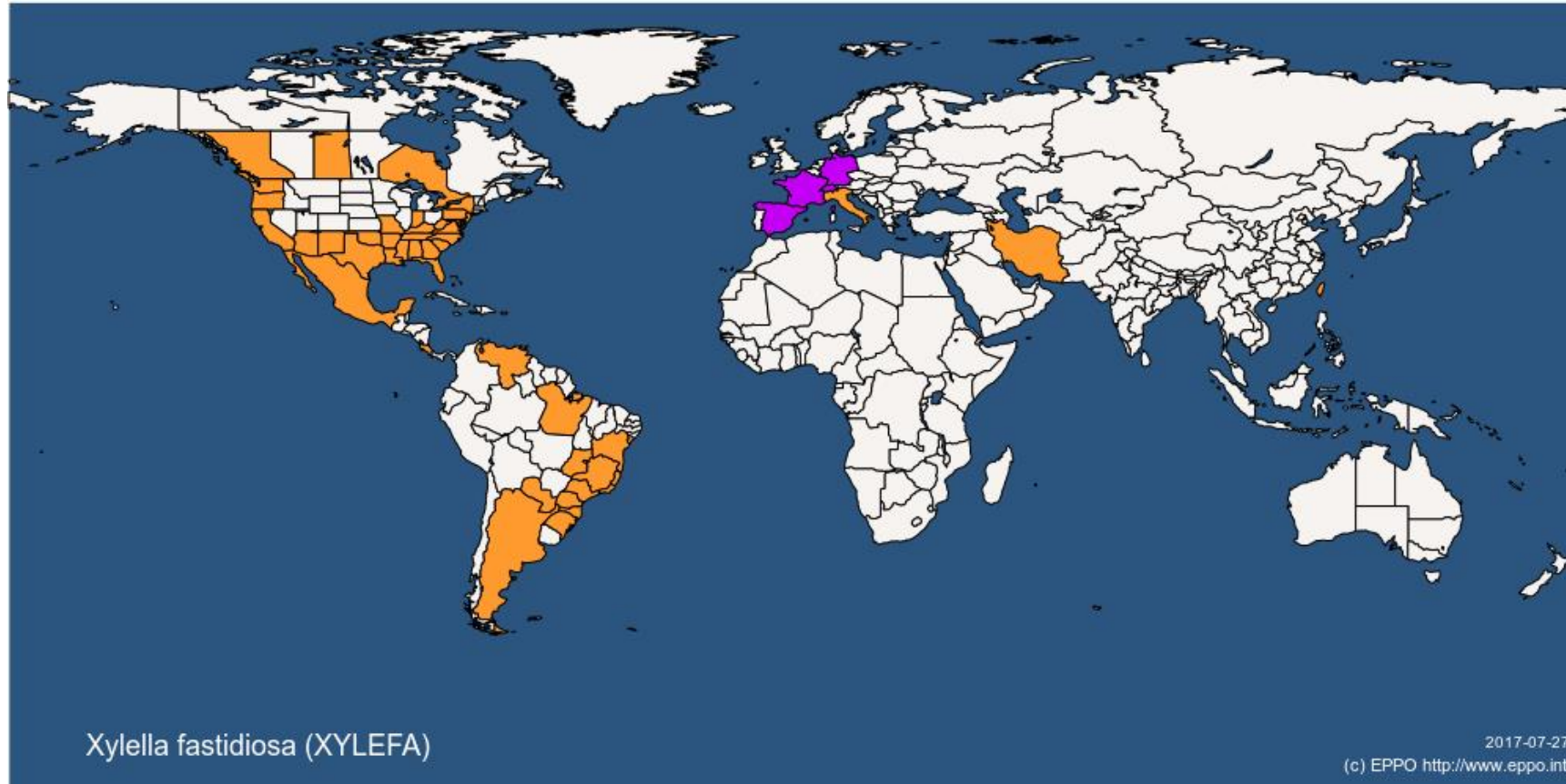
Vectors

Introduction

- *Xylella* is not mechanically transmitted or seed borne
- It is spread by various insects that feed on the xylem fluid such as some leafhoppers and spittlebugs
- The **meadow spittlebug** (*Philaenus spumarius*) is the only confirmed vector identified in Europe to date and is the primary vector in Italy
- This species is widespread in Europe (including the UK) and feeds on hundreds of hosts

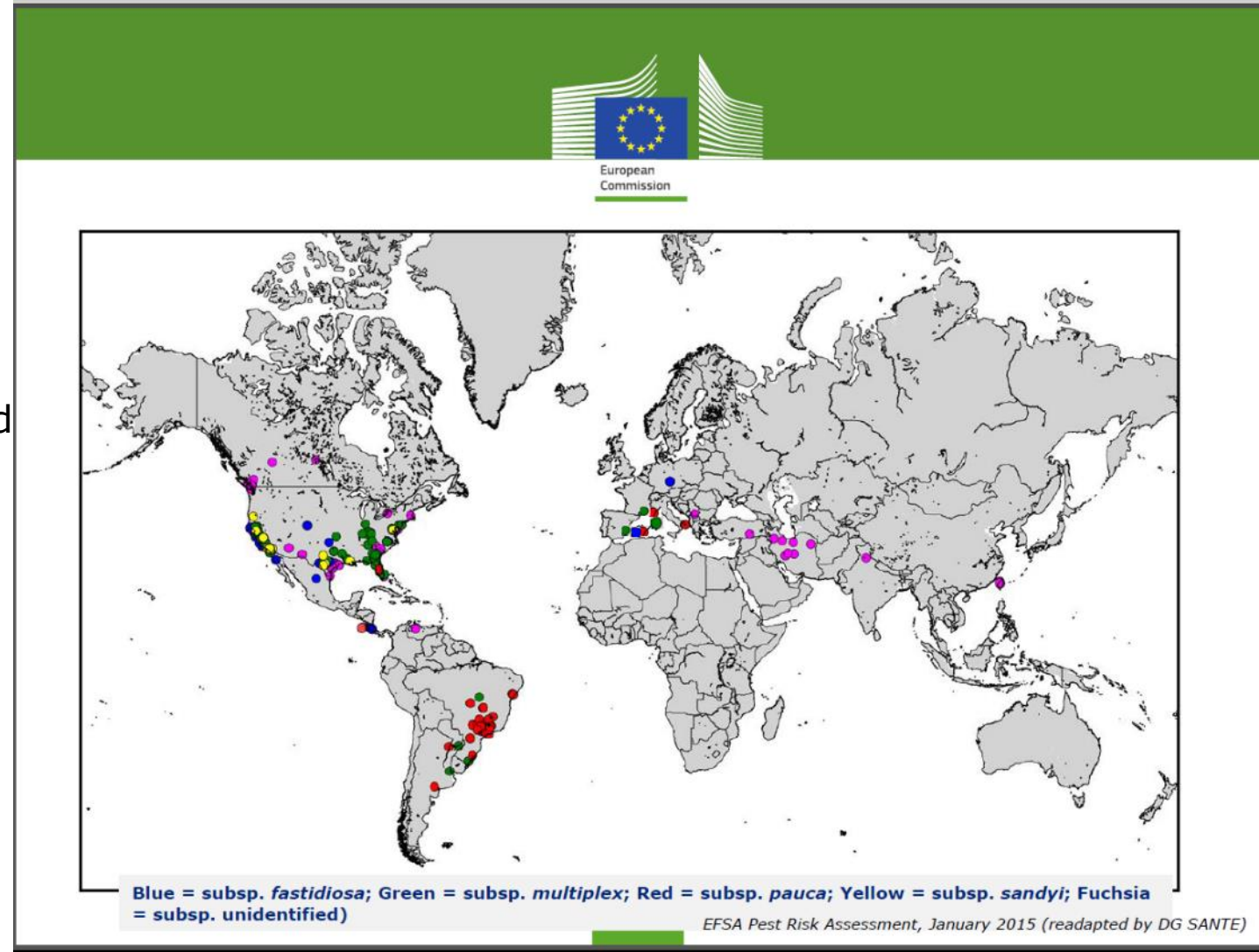


Xylella – Worldwide Distribution



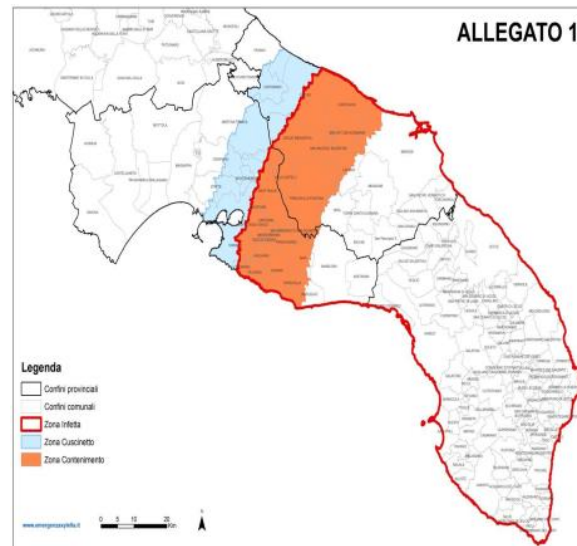
Xylella sub species

Blue = *fastidiosa*
Green = *multiplex*
Red = *pauca*
Yellow = *sandyi*
Fuchsia = unidentified



Italy (subsp. pauca)

- First findings in EU, from 2013
- Containment zone established in Lecce/parts of Brindisi
- New findings being confirmed, including in buffer zone, with ongoing concerns about timeliness of felling
- Mainly Olive affected



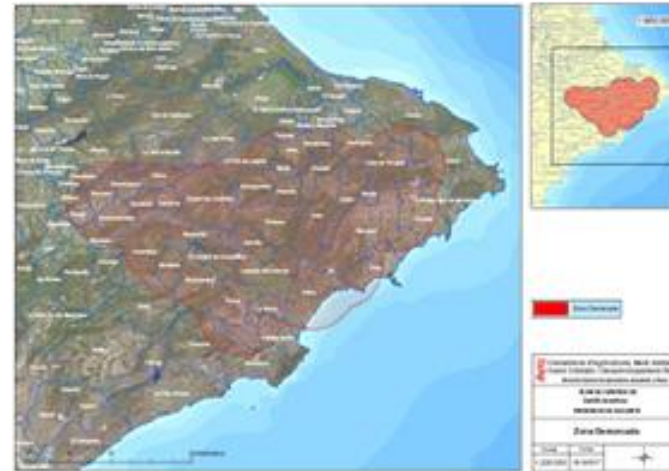
Spain – Balearics (3 subspecies)

- Outbreaks on Mallorca, Menorca and Ibiza and whole islands regarded as infected
- Wide range of trees and shrubs affected
- New hosts and outbreak areas being confirmed
- Eradication unachievable and containment policy confirmed



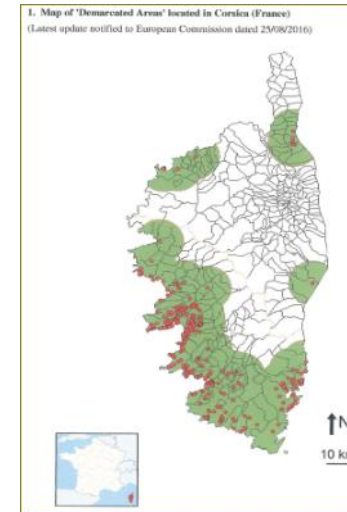
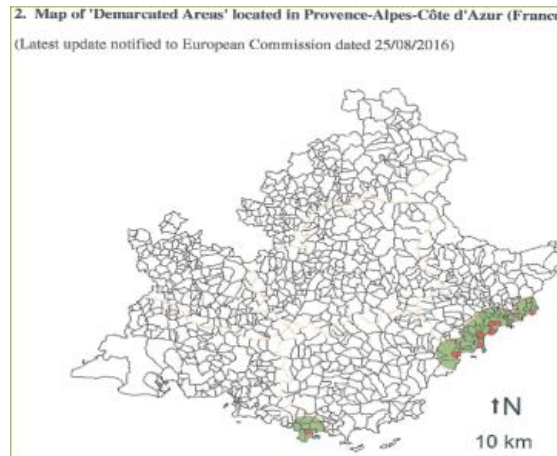
Spain – mainland (subsp. multiplex)

- Increasing numbers of findings in Valencia, all on *Prunus dulcis* to date



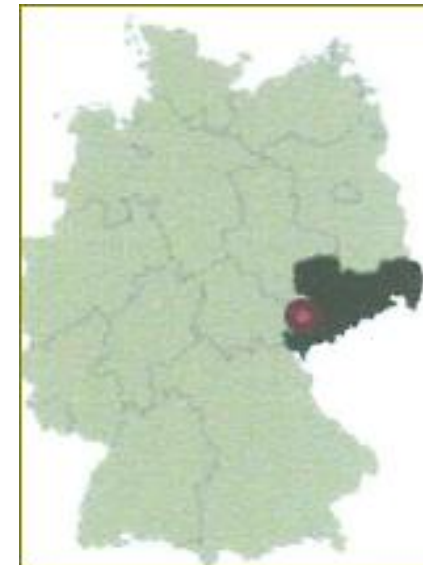
France (subsp. multiplex)

- Corsica and Provence-Alpes-Côte d'Azur (PACA)
- Single finding of subspecies *pauca* near the Italian border
- Containment policy confirmed for Corsica
- Main host *Polygala myrtifolia*
- Eradication being pursued on mainland, with new findings being confirmed within buffer zones



Germany (subsp. *fastidiosa*)

- One finding only, in a nursery greenhouse in Saxony
- Hosts: *Nerium oleander*, *Rosmarinus*, *Erysimum* and *Streptocarpus*
- Demarcated area established between Saxony and Thuringia with no further findings following intensive surveillance
- Buffer zone width being reduced to 1km (in line with new EU Decision) with removal altogether by March



Xylella controls strengthened Dec 2017

Victory in fight to save British oaks from deadly Xylella fastidiosa disease | News | The Times & The Sunday Times - Google Chrome

Secure | <https://www.thetimes.co.uk/article/15825898-b5ce-11e7-a7ed-96e3d3dae681>

THE  TIMES

SUBSCRIBE LOG IN

Victory in fight to save British oaks from deadly Xylella fastidiosa disease

Ben Webster, Environment Editor

October 21 2017, 12:01am,
The Times



Xylella fastidiosa was first detected in 2013 when it destroyed olive trees in southern Italy. It has since spread to France, Spain and Mediterranean islands

CHRIS ISON/PA

EU Decision: Stronger surveillance and response to findings

- Provisions to improve harmonisation of **surveillance**, by reference to **technical guidelines**
- Publication of **contingency plans**, to aid transparency
- Use of prescribed **diagnostic methods** to confirm findings, to ensure the use of robust and proven methods
- **Provisional demarcation** of outbreaks pending confirmation of subspecies, to ensure timely responses



EU Decision: Stronger movement requirements

- **'Host plants'** being moved between businesses to be from premises that are **officially inspected** on an annual basis, with **testing of symptomatic plants**, in addition to being accompanied by a **plant passport**
- **Higher risk** 'host plants' to be from officially inspected sites and **systematically tested** using a statistically based sampling system, irrespective of whether they show symptoms; this includes *Coffea*, *Lavandula dentata*, *Nerium oleander*, *Olea europaea*, *Polygala myrtifolia* and *Prunus dulcis* – to take effect from 1 March 2018
- **Suppliers and recipients** of high risk hosts to maintain records of movements for **3 years**

EU Decision: Demarcated zones

- **Buffer zone** width in demarcated areas to be **5km**, except for containment zones, where it will remain at **10km**
- New requirements for demarcating **isolated findings**, where the buffer zone width will be **1km** and can be lifted after **12 months**, following intensive investigation and actions
- **Exemption** from felling trees of **historic value** in demarcated areas, where these are kept **physically isolated from vectors** and subject to regular inspections
- **Plant varieties** (currently 3 vine varieties) confirmed as **not susceptible** to Xylella to be **exempt from movement restrictions** in demarcated areas
- Updated requirements for **managing vector populations** around nurseries approved to move 'specified plants' from demarcated areas; currently no such nurseries are approved



Xylella controls pre-border

- Keep pest risk analysis under review; an updated UK analysis was prepared in September 2017
- Ongoing European Food Safety Authority advice on emerging evidence
- Review developments across Europe monthly through the SCOPAFF committee
- Review the UK Plant Health Risk Register monthly

Xylella controls at the border

- The Animal and Plant Health Agency (APHA) carry out systematic checks of non-EU imports of host plant species known globally
- Controls and checks on hosts from outside EU
- Plant passporting in place for movements of known hosts in the EU
- Obligatory eradication and movement restrictions apply for EU outbreak areas

Xylella controls post- border

- APHA and Forestry Commission carry out targeted surveillance of premises growing and trading host material as well as in the wider environment.
- A statutory notification scheme applies for imports of certain host tree species from the EU, to build intelligence, facilitate tracing and target surveillance.
- Industry knowledge and data



Xylella preparedness

- Ongoing preparedness review involves all UK plant health departments
- Generic plant health contingency plan with a specific *Xylella* plan
- Plan will be exercised next week
- Research programme to ensure accurate diagnoses and are involved in EU initiatives on the latest scientific developments
- We are liaising with the HTA on development of an industry Plant health Assurance Scheme

Xylella awareness raising

- Citizen science awareness using Tree Alert and Observatree trained volunteers
- The International Plant Sentinel Network provides an early warning of developments globally
- Biosecurity guidance, pest factsheets and alerts.
- Articles and training events with industry associations and workshops for plant buyers and retailers.
- Guidance on *Xylella* host plants to encourage good practice with plant buying with HTA and NFU
- HTA and RHS have developed their own initiatives, to ensure best practice

Voluntary action by growers and industry

A survey of professional plant buyers by Horticulture Week found 74% have stopped buying some imported plants because of the threat of Xylella, while 69% are buying more British-grown plants because of the risk.

The plants that importers have stopped buying are olives (77%), oleander (61%), polygala (59%), rosemary (56%), hebe (51%) and lavender (51%).

The tree notification scheme introduced in 2013, has resulted in a 36% decrease in the number of imported oak and pine trees, and a 65% decrease in the number of imported sweet chestnut

lella statement <https://t.co/6CDI9I5A9t> <https://t.co/FxflgvaQu> - Google Chrome

om/HTAnews/status/892387028440158209

HTA News @HTAnews Following

Garden retailers sign up to industry #Xylella statement ow.ly/xDmw30e4oWY



7:10 am - 1 Aug 2017

2 Retweets 2 Likes 

  2  2 

 Tweet your reply

BALI Landscape magazine April 4

Call to landscapers to be vigilant for plant diseases

Sometimes when the soil is moved, it can bring with it some very tiny organisms that can cause the soil to become very fertile. It is important to make sure that the soil is clean and free from any organisms that could cause the soil to become very fertile.

Landscape industry professionals are being asked to keep alert for plant diseases following the discovery of a serious sweet chestnut infection.

Several sweet chestnut trees (*Castanea sativa*) at four locations in Devon have been confirmed as infected with *Cryphonectria parasitica* (C. parasitica), a fungus that causes sweet chestnut blight. The Forestry Commission and the Animal and Plant Health Agency (APHA) took rapid action in December after an APHA plant health inspector spotted symptomatic trees in a car park. An intensive survey of chestnut trees within 1km turned up the second site, in woodland. The others were found during a survey of sites supplied with plants from the same source as those planted at the first woodland.

Chestnut blight has caused widespread damage to America's chestnut forests and regionally significant losses in continental Europe. It had only been found twice before in the UK, in southern England, including two orchards supplied by the same continental nursery. Other plants from the same consignment were traced and destroyed and subsequent surveys found no further evidence.

Professor Nicola Spence, the Government's Chief Plant Health Officer, said the possible involvement of imported plants highlighted the role the landscape industry could play in protecting the UK from exotic pests and diseases.

"Plants are essential to our well-being and need our protection," Professor Spence said. "The explosion in global trade has increased the risk of harmful organisms getting into the UK, and some have. We are committed to doing everything possible to prevent plant pests and diseases crossing our borders but we cannot eliminate all risks. We therefore have stringent plans to deal with threats, and take prompt action should they be detected."

She continued: "However, government cannot do this alone and we can all play a part in preventing their entry, and in minimising the spread of those that have got in.

Landscape industry professionals are ideally placed to help so I appeal to buyers and specifiers to source plants very carefully.

Only deal with reputable suppliers who practise high standards of biosecurity (plant hygiene) and comply with regulations. These include the requirement to pre-notify pending imports of certain species, including sweet chestnut, to the plant health authorities. Remember, too, that you can often 'buy British' to reduce the risk of being party to an introduction.

"Talk to your clients so that they, too, understand their role in protecting our plant heritage. Landscapers can provide a valuable supplement to our formal surveillance for signs of trouble, so get familiar with the pests and diseases of concern, keep alert for them, and report suspicious symptoms to us.

"Finally, please practise good biosecurity. Organisms can be spread around on dirty clothing, equipment and vehicles so keep it clean and don't give them an easy ride: give them a good brush down before leaving the site and wash and/or disinfect them before moving to the next site. Our web pages have advice on what to do."

Investigations into the outbreak are continuing as this edition of Landscape News goes to press. Precautionary restrictions have been placed on premises within 5km (5.2 miles) of the infection sites, prohibiting movement of oak and sweet chestnut material until further notice. Oak is included because although oak trees suffer only superficial damage from *C. parasitica* infection, they can spread it.

Further information:

- Tree pests and diseases, including chestnut blight – forestry.gov.uk/pestsanddiseases
- Report suspected symptoms on trees with forestry.gov.uk/treelert
- Advice about plant importing regulations, and reporting suspected symptoms on plants in trade – planthealth.info@apha.gsi.gov.uk or 01904 405138
- Biosecurity guidance, including Keep it Clean campaign – forestry.gov.uk/biosecurity
- Government plant health portal – planthealthportal.defra.gov.uk

Professor Nicola Spence



APHA spreading the word at Chelsea May 2017



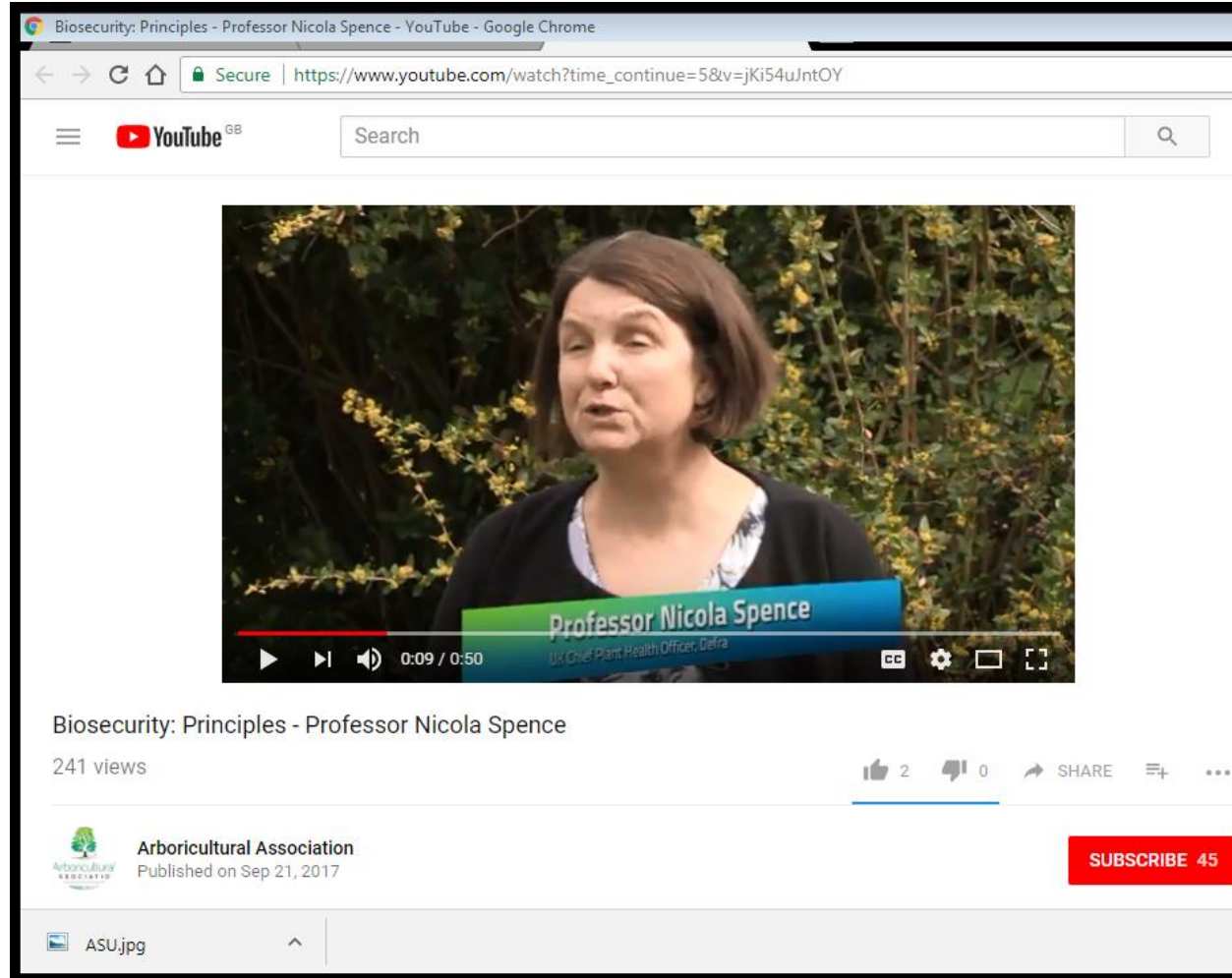
Four Oaks 5 Sept



Arb. Association Conference Sept 13



Arb. Assoc. Biosecurity Video Sept 13



The screenshot shows a YouTube video player in a Google Chrome browser. The browser's address bar displays the URL: https://www.youtube.com/watch?time_continue=5&v=jKi54uJntOY. The YouTube interface includes a search bar and navigation icons. The video itself features Professor Nicola Spence, identified as the UK Chief Plant Health Officer at Defra, speaking in front of a background of green foliage. A blue and green lower-third graphic displays her name and title. The video player controls show a progress bar at 0:09 / 0:50, along with play, volume, and full-screen icons. Below the video, the title "Biosecurity: Principles - Professor Nicola Spence" is visible, along with 241 views, 2 likes, and 0 comments. The channel name "Arboricultural Association" and the publication date "Published on Sep 21, 2017" are shown. A red "SUBSCRIBE 45" button is located in the bottom right corner of the video player area. At the bottom left of the player, there is a small thumbnail labeled "ASU.jpg".

Xylella awareness podcast with Peter Seabrook Sept 28



HRH Birthday Editorial Nov 8



Futurescape November 14



The RHS has banned the use of high risk plants such as olives and lavenders that have been grown abroad at May's Chelsea Flower Show because of the risk of *Xylella*

game changing' plant disease - BBC News - Google Chrome

.bbc.co.uk/news/science-environment-42504931

Gardens under threat from 'game changing' plant disease

By Helen Briggs
BBC News

© 29 December 2017

f t b e Share



EPPO

The pest has infected thousands of hectares of olive plantations in Italy

er foreign bacteria, gardeners warned - Google Chrome

www.telegraph.co.uk/news/2017/12/29/buy-uk-plants-avoid-killer-foreign-bacteria-gardeners-warned/

The Telegraph HOME NEWS SF

News

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News

Buy UK plants to avoid killer foreign bacteria, gardeners warned

f share t e



Plant Health Skills



- Harper Adams University in partnership with Defra, Fera and APHA will create a post graduate certificate (PgC) in Plant Health and Biosecurity
- The PgC will comprise 4 modules
 - Plant Health Principles
 - Plant Health Practice
 - Plant Biosecurity
 - Surveillance and diagnostics
- Part-time over 1 or 2 years; 60% of each module will be delivered on-line
- Individual modules will also be available for CPD (i.e. no assessment)
- Starting the course in September 2018
- Accreditation by the Royal Society of Biology

Priorities for 18/19

- Launch a new Tree Resilience Strategy
- Biosecurity more prominent in 25 year Environment Plan and new Food and Farming Strategy
- UK involvement in review of EU Xylella and Epitrix Emergency Decisions; Protected Zones review
- Implementation of new EU Plant Health Regulation: 'high risk trades', 'priority pests' and 'products not requiring phytosanitary certification'
- Direct sales and internet trades
- EU Exit related work on imports, exports, WPM and PVS
- Awareness raising and communication: Chelsea Flower Show
- Start work on a new GB Biosecurity Strategy 2020

Partnership

- Many organisations and individuals support official surveillance and play a vital role in supplying intelligence and reaching areas/sectors where official services do not have a regular presence



UK Plant Health Information Portal

The screenshot shows the UK Plant Health Information Portal in a Google Chrome browser. The address bar displays the URL <https://planhealthportal.defra.gov.uk>. The page header includes the Department for Environment Food & Rural Affairs logo and navigation links: Home, Pests and diseases, Plant Biosecurity Strategy, Citizen science, and Resources. A green banner below the header contains the text "UK Plant Health Protected Zones". A "BETA" badge is present, along with a message: "Your feedback will help us improve the UK Plant Health Information Portal". The main heading is "UK Plant Health Information Portal" with the subtitle "An online hub for plant health information, data and resources". A search bar prompts users to "Enter the name of a pest or plant you are interested in" with a placeholder "Start typing to see suggestions...". Below the search bar, there are links for "Alternatively, use additional searches based on risk register priorities for actions" and "image based search". The page is divided into two columns. The left column is titled "About the UK Plant Health Information Portal" and contains text explaining the portal's purpose and the importance of plant health. The right column is titled "Pests and diseases" and lists three key actions: "Reporting a pest/disease", "Contingency planning", and "Pest and disease alerts".

Follow me on Twitter @plantchief

The image shows a screenshot of a Twitter profile for Nicola Spence (@plantchief). The browser address bar shows the URL https://twitter.com/plantchief. The profile header features a circular profile picture of Nicola Spence and a banner image of pink peonies. Below the profile picture, statistics are listed: 1,189 Tweets, 590 Following, 1,256 Followers, 242 Likes, 1 List, and 0 Moments. An 'Edit profile' button is visible. The bio identifies Nicola Spence as the UK Chief Plant Health Officer, a botanist and plant pathologist, and provides the website defra.gov.uk and the date she joined in March 2014. A grid of 98 photos and videos is shown below the bio. The main content area displays a tweet from Nicola Spence dated Jan 17, mentioning Anthony Hawkins from Homebase and discussing plant health challenges. The tweet includes a video of a presentation titled 'OUR BIGGEST CHALLENGES' with a list of bullet points: '1. Plant health', '2. Climate change', '3. Pesticides', '4. Food security', and '5. Environmental protection'. The video shows a speaker on a stage with an audience in the foreground. To the right of the tweet, there is a 'Your Tweet Activity' section with a bar chart showing 1,973 impressions over the last week, and a 'Who to follow' section listing John Legere (@JohnLeg...), Mahmut Tör (@MahmutTor), and Peter Massini (@PeterMass...). At the bottom of the page, there is a 'Trends for you' section.