Department
for Environment
Food & Rural Affairs

Horizon scanning a UK perspective

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Horizon scanning a UK perspective

Talk overview

- Introduction to the UK's approach to horizon scanning
- Info sources
- Examples of P&D found via horizon scanning
- Decisions and processes
- Risk Register
- Pests that have been regulated as a result of Horizon scanning
- Beyond the horizon, a forward look

Horizon scanning in the UK

- **Horizon Scanning**
- No real hard definition UK GOS defines it as …
- *“The systematic collection of insights on emerging trends and weak signals of change to identify potential threats, risks and opportunities.”* (UK Government Office for Science – Futures Toolkit 2024)
- This is a broad definition, for plant health it is a bit more bespoke.

Horizon scanning in the UK

- **Horizon scanning:** *Surveillance activities that help prevent plant pests* entering the country or spreading further by identifying potential threats before they become a problem.*

1. **Early Detection**: Horizon scanning involves systematically examining potential plant health threats. By identifying them early, it allows for timely action to prevent their introduction and spread.

2. **Prioritisation**: By evaluating and prioritizing the most significant threats, resources can be allocated more effectively to manage and mitigate the risks posed by plant pests.

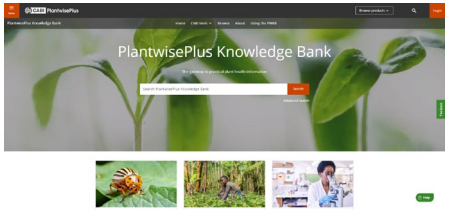
3. **Risk Assessment**: Assess the risks associated with different pests, including their likelihood of arrival, establishment, and potential impact to the UK.

4. **Informed Decision-Making**: The information gathered through horizon scanning and risk assessments helps support scientists, policymakers, and ministers in making informed decisions about biosecurity measures and management strategies.

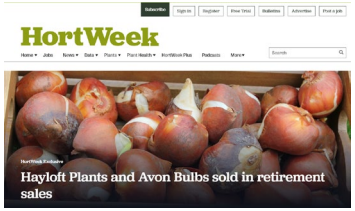
*Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products. Note: In the IPPC, “plant pest” is sometimes used for the term “pest” (ISPM 05)

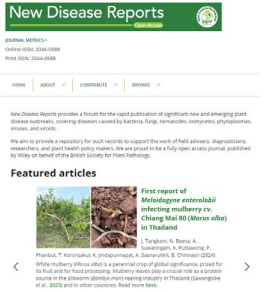
Information sources

- Current literature (grey)
- Scientific journals (e.g. New disease reports)
- Trade journals (e.g. HortWeek)
- Online alerts (e.g. EPPO/CABI Pest Alerts)
- Newspapers (e.g. Washington post)
- Social media (Facebook, Twitter (X))
- Natural history recording sites (e.g. iNaturalist etc…)

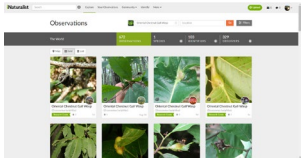


Low tech
Hard work!





EPPO Reporting Service

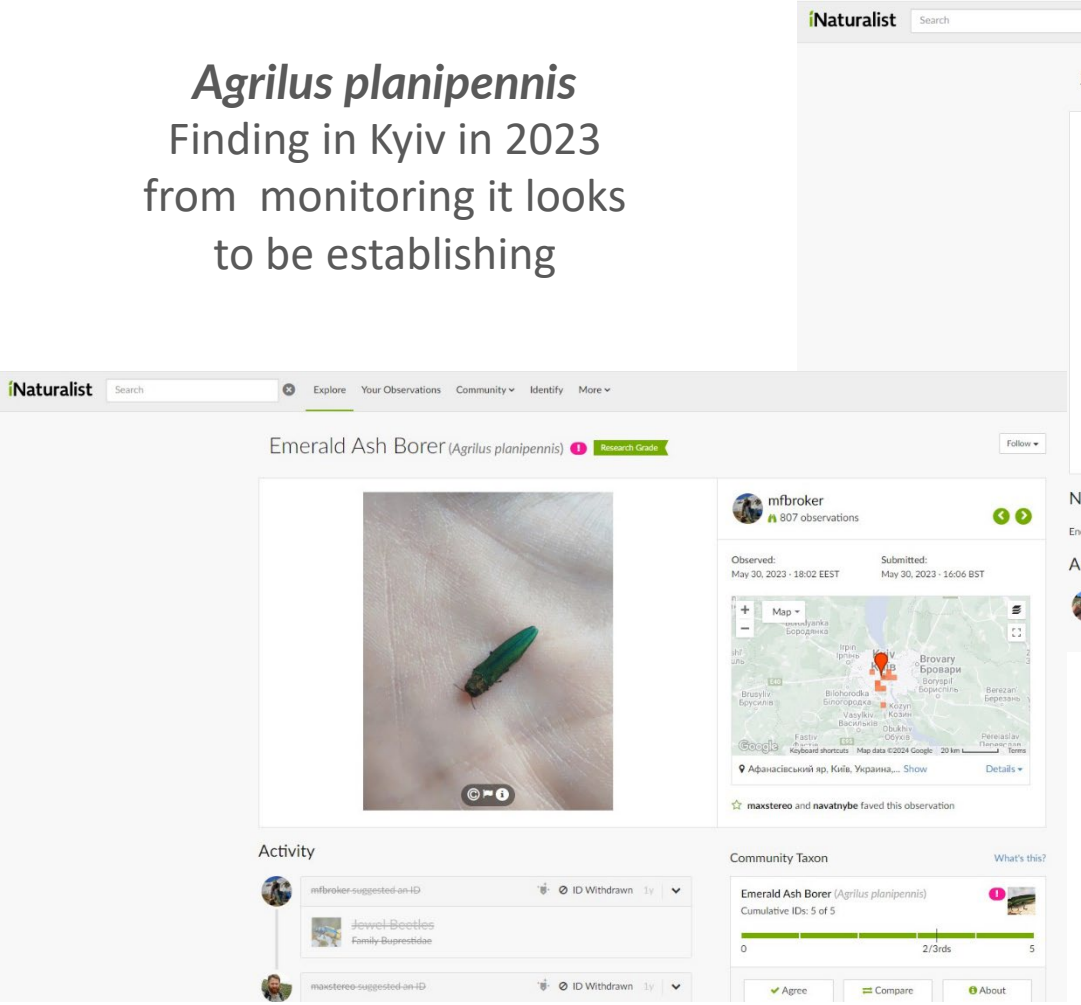


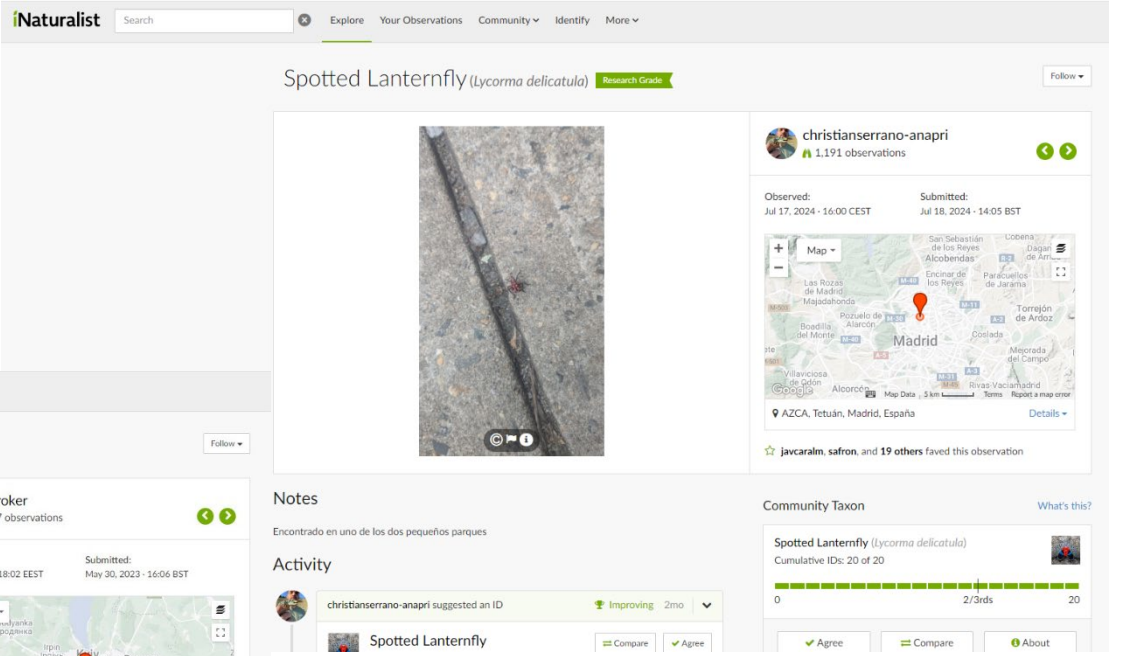
The Washington Post
Democracy Dies in Darkness

An arboreal murder mystery: What is killing beech trees?

Agrilus planipennis

Finding in Kyiv in 2023 from monitoring it looks to be establishing





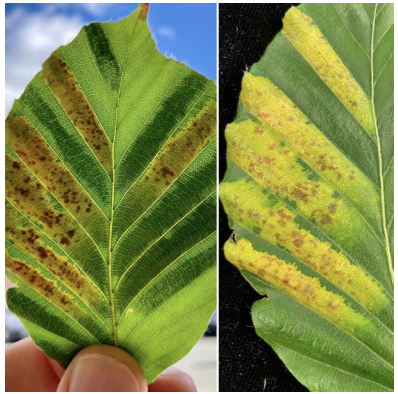
Lycorma delicatula

Sighting in Madrid July 2024, likely an incidental so far, no more records have appeared

https://www.inaturalist.org/observations/230083010 - https://www.inaturalist.org/observations/164638313

Examples of P&D

- **Beech leaf disease** – first picked up in Aug 2018 in an article in the Washington post about a mystery disease that was effecting north American beech. At the time little was known about this disease, so the decision was taken to keep a “watching brief” on this emerging disease. EPPO reported this disease in 2018, the following year (2019) it was added to the Alert list at the same time it was also added to the UK’s risk register.

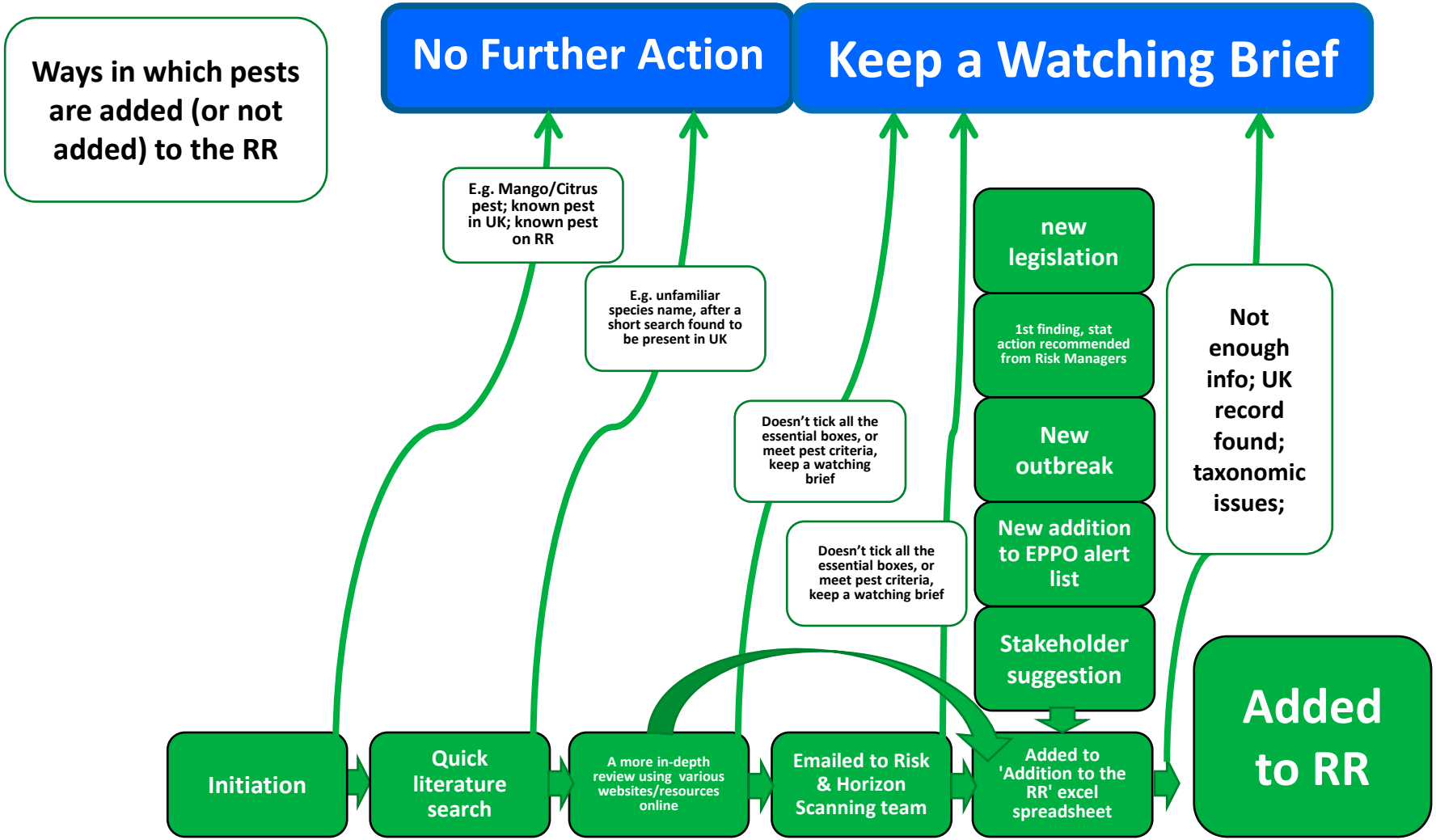


- **Spotted lantern fly (*Lycorma delicatula*)-** first picked up in 2016 via an article in Entomology today about being prepared for this pest in the USA, EPPO produced a rapid PRA in 2016. EPPO PRA (Defra on panel) showed it was likely to be an issue in USA, it also highlighted more hosts than previously known, UK kept a watching brief and as more information came to light this prompted the UK to conduct a PRA

BLD - https://planthealthportal.defra.gov.uk/pests-and-diseases/uk-plant-health-risk-register/viewPestRisks.cfm?cslref=28678
SLF - https://planthealthportal.defra.gov.uk/pests-and-diseases/uk-plant-health-risk-register/viewPestRisks.cfm?cslref=27337

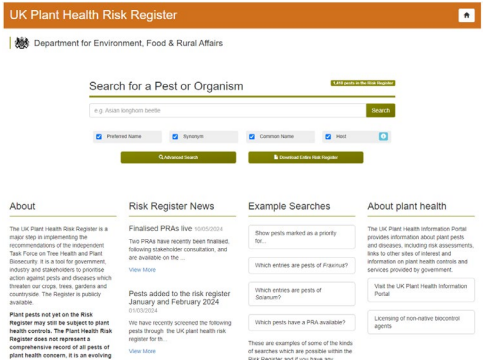
Decision making process

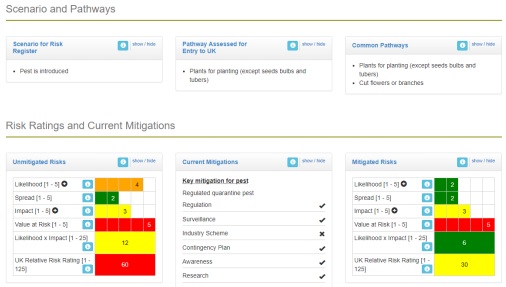
- When new information is found, a quick search is done to find out more information on the pest and to see if it meets the pest criteria
- If it does meet the criteria then it is highlighted to the team via email or over a dedicated team's channel.
- Information on the pest is saved to our Shared Network Drive in the relevant species folder.
- If we feel the pest needs more discussion it can be discussed at a sub-team meeting or if more urgent a meeting can be set up to discuss.
- If we feel further action is needed, the Risk register is then used for a rapid assessment.


Ways in which pests are added (or not added) to the RR
No Further Action
Keep a Watching Brief
E.g. Mango/Citrus pest; known pest in UK; known pest on RR
E.g. unfamiliar species name, after a short search found to be present in UK
Doesn't tick all the essential boxes, or meet pest criteria, keep a watching brief
Doesn't tick all the essential boxes, or meet pest criteria, keep a watching brief
new legislation
1st finding, stat action recommended from Risk Managers
New outbreak
New addition to EPPO alert list
Stakeholder suggestion
Not enough info; UK record found; taxonomic issues;
Initiation
Quick literature search
A more in-depth review using various websites/resources online
Emailed to Risk & Horizon Scanning team
Added to 'Addition to the RR' excel spreadsheet
Added to RR

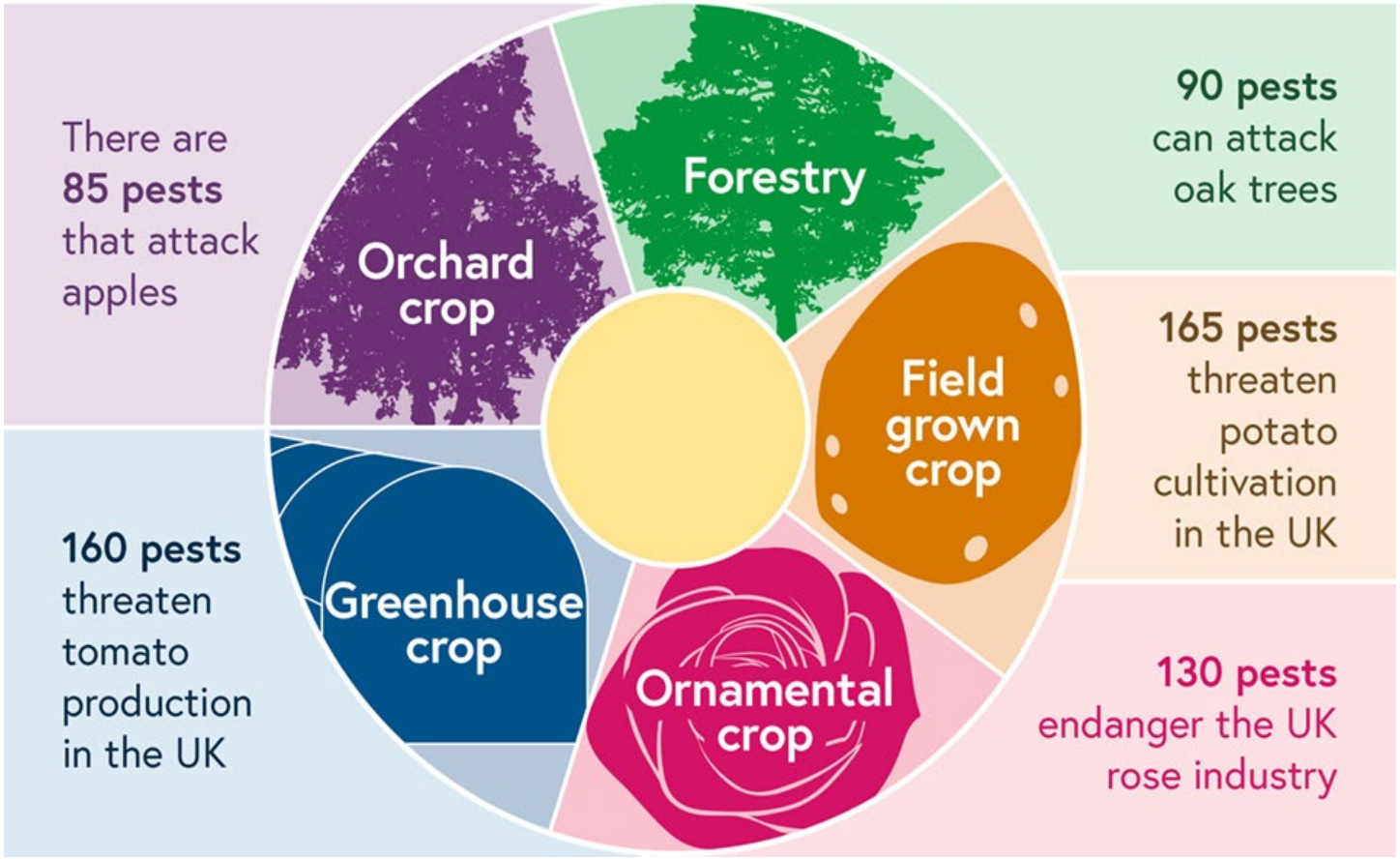
The UK Plant Health Risk Register

- It is a1st tier screening tool to help filter out the lower risk pests and focus on higher risk pests based on the evidence available on individual pests.
- The information is collated, and pests can be compared by giving them a UK relative risk rating.
- This risk rating is calculated using parameters such as; the likelihood of the pest reaching the UK, its ability to spread as well as the impact that it causes on the plants affected.
- The higher the risk register score, the greater the threat it poses to the UK, if new evidence comes to light the rating is re-calculated.





Potential pest threats screened through the UK Plant Health Risk Register



Plant biosecurity strategy for Great Britain (2023 to 2028)
https://www.gov.uk/government/publications/plant-biosecurity-strategy-for-great-britain-2023-to-2028n

Pests regulated as a result of Horizon scanning

Spotted lanternfly (*Lycorma delicatula*) first picked up in 2016 via an article in Entomology today about being prepared for this pest in the USA, EPPO produced a rapid PRA in 2016. EPPO PRA (Defra on panel) showed it was likely to be an issue in USA, it also highlighted more hosts than previously known, UK kept a watching brief and as more information came to light this prompted the UK to conduct a PRA

Agrilus fleischeri pest of poplar, first picked up in 2016 via personal communication at a conference. July 2017 added to Risk Register, EPPO added to the alert list in 2018, in 2019 moved to EPPO A2 list following EPPO PRA (Defra on panel). The EPPO PRA was used to put that into legislation, now a regulated QP for GB

Beyond the horizon, a forward look

- Horizon scanning is time and resource intensive, and our team is not very large
- Potential use of AI and other Data scraping tools?
- Past experiences yielded lots of results, but it was quantity over quality
- AI has improved in recent years, recently started to revisit how useful AI could be for Horizon scanning, talking to colleagues in PHEA (Plant Health Evidence and Analysis) on how we could use AI tools.
- **Still early days!**

Beyond the horizon, a forward look pros and cons of use of AI in horizon scanning

- AI needs data to train, large data sets are needed
- Plant health is a niche and generates a relatively small amount of data, however the data is always growing and getting bigger
- Better processes and workflows allow for AI to use smaller datasets more effectively
- Text based AI can summarise information – e.g. literature search on a certain pest or disease
- Requires use/understanding of language
- Language is complex and can lead to odd sentences/behaviours
- Beautifully written garbage, very generic statements
- Can get AI to state sources but still requires scrutiny

International Natural Hazards Forward Look

"The International Natural Hazards Forward Look (INHFL) is a multi-agency, cross-government, horizon scanning and risk assessment partnership identifying emergent and changing international natural hazards which could directly or indirectly impact UK national objectives and security, including humanitarian and development commitments. Informing decision-makers across government, the INHFL enables the UK government to be more anticipatory in its response to natural hazards, reduce the impacts of future disasters, and enhance situational awareness overall."

- As part of the GB's plant biosecurity strategy (2023-2028) plant health risks are now included in the INHFL

https://www.gov.uk/government/publications/uk-international-action-plan-for-plant-health/united-kingdom-international-action-plan-for-plant-health

International Natural Hazards Forward Look

HM Government | Animal & Plant Health Agency | British Geological Survey | Government Office for Science | Met Office | Public Health England

International Natural Hazard Forward Look

ISSUED 06/06/2019

VALID UNTIL: 12/06/2019

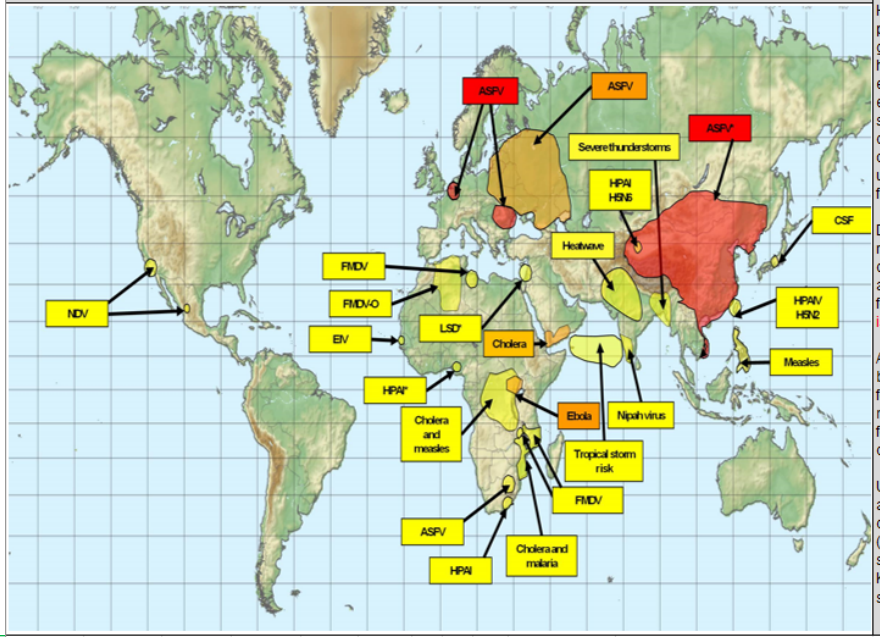
HEADLINES

Human Health: Ongoing Ebola outbreak in North Kivu and Ituri provinces, Democratic Republic of Congo. Confirmed Nipah virus in Kerala, India.

Animal Health: African swine fever still in Belgium and Eastern Europe. Foot-and-mouth disease still in North Africa.

Meteorological: Severe thunderstorms over Bangladesh. Heatwave in Pakistan and India. Tropical storm risk in Northern Indian Ocean.

SUMMARY OF NOTABLE GLOBAL EVENTS



The International Natural Hazard Forward Look provides information on global weather, volcanic, human and animal health events. It reports on new, emerging or deteriorating situations. Therefore, ongoing events that are considered to be unchanged may not feature.

Due to the unpredictable nature of some hazards, other events may occur that are not highlighted in this forward look. Updated text is written in red.

Assessments are made based on individual criteria for each type of hazard. The methodology used can be found in the accompanying document.

User feedback is greatly appreciated and should be directed to Alan Roberts (Alan.Roberts@go-science.gov.uk) or Andrew Kaye (Andrew.Kaye@go-science.gov.uk).

INHFL - recent plant health example (August)

Country and Rating	Hazard to …(either Human, Animal or Plant health)	Ongoing and Forecasted Events	Confidence	Rating	Implication
Brazil **Medium-High alert** **Medium potential impact** **Medium concern**	Plant Health	First report of the plant pathogenic fungus *Ceratobasidium theobromae*, causing cassava witches' broom disease (CWBD). Strategies are being deployed to contain and manage the disease to mitigate the impact. **Source:** Ministry of Agriculture and Livestock (MAPA) https://elproductor.com/2024/08/embrapa-identifica-en-primer-lugar-el-caso-de-arrebato-de-yuca-en-brasil/ https://revistacultivar.com/news/Ministry-of-Agriculture-confirms-Ceratobasidium-theobromae-in-cassava-in-Amap%C3%A1	High		In South America cassava is regarded as a food of the poor; Brazil is a major producer in the region. If the pathogen spreads widely the disease has the potential to cause significant reduction in cassava production and result in major economic losses.

Thank you for listening